MASS. EA10.2: G86/3/FINAL

Final Environmental Impact Report

EOEA #11083

Greylock Center

GOVERNMENT DOCUMENTS

AUG 01 2000

University of Massachusetts
Depository Copy

Prepared for:
The Commonwealth of Massachusetts
Department of Environmental Management

Prepared by:
Epsilon Associates, Inc.

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 CAMBRIDGE STREET, BOSTON, MA 02202
PHONE 617-727-3180 FAX 617-727-9402
www.state.ma.us/dem/

February 14, 2000

Argeo Paul Cellucci
GOVERNOR

Jane Swift
LIEUTENANT GOVERNOR

Bob Durand
SECRETARY

Peter C. Webber
COMMISSIONER

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

Subject: Greylock Center Final Environmental Impact Report
EOEA No. 11083

Dear Secretary Durand:

The Massachusetts Department of Environmental Management (DEM) is pleased to issue this Final Environmental Impact Report (FEIR) for Greylock Center. Greylock Center is an environmentally principled regional economic development project, weaving together conservation land, environmental education, year-round recreation and sustainable development. The present FEIR responds to the Secretary's Certificate on the Draft Environmental Impact Report, as modified by the Notice of Project Change Certificate.

Of the 1,063-acre property, 790 acres (approximately 74% of the site) will be permanently protected for open space and wildlife habitat purposes. The Greylock Center 18-hole golf course has been designed by Hurdzan-Fry, an internationally respected golf design firm, known for their environmentally sensitive approach to developing golf courses. Greylock Lodge, an environmental education center to be operated by Nature's Classroom, will utilize the entire property for nature education programs. The vast majority of building development will be concentrated in a traditional mixed-use New England village on 51 acres (5% of the site). Total cumulative wetlands disturbances have been limited to approximately 4,675 square feet (0.01% of the site), while wetlands resources will be replicated at a ratio of 3.9:1 relative to wetland impacts. The Greylock Center project will therefore result in a net increase of approximately 17,825 square feet of wetland resources.

We would also like to thank all of the public and agency commenters who have had a very positive effect on shaping the project through the design process.

Very truly yours,

Peter C. Webber
Commissioner

printed on recycled paper

Final Environmental Impact Report

Greylock Center

EOEA No. 11083

Prepared for:

Commonwealth of Massachusetts
Department of Environmental Management
100 Cambridge Street
Boston, MA 02202

Prepared by:

Epsilon Associates, Inc.
150 Main Street, PO Box 700
Maynard, Massachusetts 01754-0700

With Assistance from the Greylock Center Design Team:

Copley / Wolff Joint Venture, Inc
160 Boylston, MA 02116

in association with:

Hurdzan-Fry
1270 Old Henderson Road
Columbus, Ohio
43220

Fay, Spofford &
Thorndike, Inc.
33 Broad Street
Boston, MA
02109

Wetlands & Wildlife, Inc.
409 Massachusetts Ave
Acton, MA
01720

Oxbow Associates
P.O. Box 971
Acton, MA
01720

Nordic Group
International
259 Bolton Road
Winchester, NH
03470

White Engineering, Inc
The Sugar Warehoue
410 The Hill
Portsmouth, NH
03801

Sno.Matic Engineering, Inc.
85 Mechanics Street
Lebanon, NH
03776

Clough, Harbour and Assoc.
181 Park Avenue
West Springfield, MA
01090

February 15, 2000

Table of Contents

1.0 PROJECT OVERVIEW **1-1**

1.1 Project Description and MEPA Status 1-1
1.2 Overview of Program Components and Infrastructure 1
1.2.1 Conservation Land 1
1.2.2 Golf Course 3
1.2.3 Greylock Village 3
1.2.4 Greylock Lodge 9
1.2.1 Anticipated Permits for Build-out of Greylock Center Program Components 18
1.3 Refinements to the Site Plan since the Notice of Project Change 19
1.4 Project Phasing 19
1.5 Fiscal Analysis of Phase I 19
1.5.1 Public Support 20
1.5.2 Private Investment. 25

2.0 SITE PLANNING MODIFICATIONS AND CONSISTENCY OF SITE PLAN WITH GREYLOCK CENTER MASTER PLAN **2-1**

2.1 Revisions to Golf Course Routing Plan 2-1
2.1.1 Additional Benefits Associated with Revisions to Routing Plan 1
2.1.2 Impacts Associated with Revisions to Routing Plan 1
2.2 Layout of Residential Units 2
2.2.1 Limits of tree clearing/ lawns 3
2.3 Trail System 3
2.3.1 Overview of Trail Network 3
2.3.2 Public Access to Trails in Vicinity of Golf Course 5
2.4 Future Protection for Undeveloped Portions of Greylock Center Property 6
2.5 Site Plan and Programming Consistency with Master Plan 6
2.6 Consistency of Residential Build-out with Greylock Center Master Plan 13
2.6.1 Use of Traditional New England Development Patterns 13
2.6.2 Minimization of Site Impacts 14
2.6.3 Use of Sustainable Technologies 17

3.0 WETLANDS **3-1**

3.1 Overview 1
3.2 Impacts to Bank and Land Under Water 2
3.2.1 Background 2

	3.2.1	Findings	15
3.3		Impacts to Bordering Vegetated Wetlands (BVW)	16
	3.3.1	Multi-Use Trail System	16
	3.3.2	Golf Course	17
	3.3.3	Connector Road	18
3.4		Impacts to Riverfront Areas	18
	3.4.1	Multi-Use Trail System	19
	3.4.2	Golf Course	20
	3.4.3	Connector Road	24
	3.4.4	Infrastructure Improvements	25
4.0	**STATE-LISTED SPECIES**		**4-1**
4.1		Overview	4-1
4.2		Jefferson Salamander	1
	4.2.1	Jefferson Salamander Habitat Survey Methodology and Findings	2
	4.2.2	Discussion and Site Plan Modifications Resulting from Jefferson Salamander Habitat Survey	6
4.3		Spring Salamander and Appalachian Brook Crayfish	10
4.4		State-listed Plant Species	12
5.0	**STORMWATER MANAGEMENT**		**5-1**
5.1		Overview	1
	5.1.1	Approach	4
	5.1.2	U.S. Natural Resources Conservation Service (NRCS) Soils Classifications	5
5.2		Site Analysis	5
	5.2.1	Golf Course	5
	5.2.2	Golf Clubhouse	9
	5.2.3	Golf Maintenance Facility	14
	5.2.4	Greylock Village – Phase I	16
	5.2.5	Greylock Village - Phase II	21
	5.2.6	Greylock Lodge	23
	5.2.7	Connector Road	25
	5.2.8	West Mountain Road/West Road Intersection	27
	5.2.9	DEP's Stormwater Management Policy - Standards 5 - 9.	28
5.3		Summary	30
6.0	**MITIGATION**		**6-1**
6.1		Overview	1
6.2		Wetland Compensation Plan	1
	6.2.1	Background	1
	6.2.2	Wetland Compensation Plan Implementation	2

6.2.3 Wetland Compensation Summary 7
6.3 Stormwater Management 8
6.4 Integrated Pest Management/ Turf Management Plan 9
6.4.1 Turfgrass Selection 9
6.4.2 Weed Management 9
6.4.3 Integrated Pest Management Plan 9
6.5 Greylock Center Stewardship Plan 9
6.5.1 Management Responsibilities 9
6.5.2 Stewardship Implementation Guidelines 10
6.5.2.1 Sensitive Natural Communities 10
6.5.2 Habitat Management Areas 13
6.5.3 Developed Areas 18

7.0 DRAFT SECTION 61 FINDING 7-1
Project Description 1
History of MEPA Review 2
Related Permits and Approvals 2
Overview of Project Impacts 4
7.1 State-Listed Species 4
7.2. Existing Vegetative Communities 5
7.3 Wetlands, Water Quality and Drainage 6
7.4 Water Supply 8
7.5 Wastewater 8
7.6 Agricultural Resources 8
7.7 Cultural Resources 9
7.8. Traffic 10
Mitigation Summary 10
Findings 12

8.0 RESPONSE TO COMMENTS ON THE NOTICE OF PROJECT CHANGE 8-1
8.1 Approach 1
8.2 Responses to Comments 1

TABLES

1-1 Summary of Anticipated Permits for Construction of Greylock Center

1-2 Greylock Center Construction Phasing

2-1 Length of Trails to be Constructed by Phase

2-2 Abbreviated Land Use Guidelines Established by the Greylock Center Master Plan

2-3 Development Programming Guidelines Established by the Greylock Center Master Plan

3-1 Summary of Estimated Wetland Impacts

3-2 Riverfront Area Impact Calculations

5-1 Summary of Soil Types

5-2 Drainage Area 1 Runoff Calculations - Clubhouse

5-3 Drainage Area 2 Runoff Calculations - Clubhouse

5-4 Drainage Area 2 Runoff Calculations -Golf Maintenance Facility

5-5 Drainage Area 3 Runoff Calculations - Greylock Village Phase I

5-6 Drainage Area 4 Runoff Calculations - Greylock Village Phase I

5-7 Drainage Area 5 Runoff Calculations - Greylock Village Phase I

5-8 Summary of Impervious Areas and Recharge Requirements

5-9 Drainage Area 1 Runoff Calculations - Greylock Village Phase II

5-10 Drainage Area 2 Runoff Calculations - Greylock Village Phase II

5-11 Drainage Area 7 Runoff Calculations - Greylock Lodge

5-12 Drainage Area 9 Runoff Characteristics – Connector Road

6-1 Proposed Plant List for Wetland Compensation Areas

6-2 Wetland Compensation Site Areas

6-3 Grassing Selections for the Greylock Center Golf Course

MEPA Correspondence

Epsilon Associates, Inc.

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street, Boston, MA 02202

ARGEO PAUL CELLUCCI
GOVERNOR

JANE SWIFT
LIEUTENANT GOVERNOR

BOB DURAND
SECRETARY

Tel. (617) 727-9800
Fax (617) 727-2754
http://www.magnet.state.ma.us/envir

October 15, 1999

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS ON THE NOTICE OF PROJECT CHANGE

PROJECT NAME	: Greylock Center
PROJECT MUNICIPALITY	: Adams
PROJECT WATERSHED	: Hoosic
EOEA NUMBER	: 11083
PROJECT PROPONENT	: Department of Environmental Management
DATE NOTICED IN MONITOR	: September 8, 1999

Pursuant to the Massachusetts Environmental Policy Act (G.L. c. 30, ss. 61-62H) and Section 11.10 of the MEPA regulations (301 CMR 11.00), I have reviewed the Notice of Project Change submitted on this project and hereby determine that the proponent may proceed to the Final Environmental Impact Report (FEIR).

This project involves a public-private development venture proposed by the Department of Environmental Management and Greylock Management Associates for the 1,063 acre Greylock Center property, immediately adjacent to the Mount Greylock State Reservation. The proposal involves the development of a multi-use recreational and educational complex that includes an environmental education center, an 18-hole golf course and appurtenant buildings, a 160 room resort hotel and conference center, up to 300 residential units clustered in a village center complex, a 40 room inn, and many additional recreational amenities including trails and camping sites.

This Notice of Project Change (NPC) has been filed to provide the public and permitting agencies an opportunity to review significant modifications to the site plan for Greylock

Printed on Recycled Stock 20% Post Consumer Waste.

Center that have been made as a result of comments received on the Draft EIR (DEIR). The NPC also provides final confirmation of wetland boundaries on the site, the results of groundwater explorations on the site, and a request for an early action waiver, which would allow the Greylock Lodge, including the environmental education center to proceed prior to completion of the FEIR. The NPC also contains responses to the comments received on the DEIR.

Site Planning

The site plan described in the NPC is a further development of the Modified Site Plan contained in the DEIR, which the Certificate identified as the preferred alternative. In general, the revised site plan reflects sound principles of sustainable development, with a more compact cluster development pattern that reduces infrastructure construction and impacts on environmental resources. In the revised site plan, the hotel has been moved to the village center area; the environmental education has been relocated closer to the southern boundary; and the golf course and club house have been relocated entirely on the eastern side of Peck's Brook. The FEIR should continue to refine the golf course layout, to further avoid or minimize its impacts on natural resources.

The revised site plan includes several housing units along West Mountain Road at the entrance to Greylock Center. These homes are located at the scenic gateway to the property and would seem to detract from the scenic nature of the area, as well as introducing an element of dispersed "sprawl" development at odds with the more compact village center pattern that characterizes the rest of the project. I encourage the proponent to consider relocating or eliminating these units in the FEIR. In addition, to further protect the forested character of the site, I encourage DEM in its final site plan to strictly limit tree clearing and lawns adjacent to all housing areas. I also encourage DEM to evaluate legal mechanisms for the permanent protection of the undeveloped portions of the site.

The plan involves the development of many trails within the site, many of which connect with existing trails on the Greylock Reservation. Several commenters have expressed concern that the proximity of the golf course may cause the general public to feel constrained in their use of the trails. The Final EIR should include enforceable provisions to ensure public access to these trails and include signage and other elements as may be required

to encourage public use.

Another sustainable development consideration is a phasing plan that avoids the unnecessary extension of infrastructure and other adverse impacts. The Final EIR should clearly describe each anticipated phase of the project, and present plans that show the extent of the project at the conclusion of construction of each phase.

Phase I Waiver

I have considered the request for an early action waiver. I have considered this request relative to the factors set forth in Section 11.11 of the MEPA Regulations. Although the new location of the environmental education center appears to have significantly reduced impacts in comparison with the previous location, because of the sensitivity of this site and the need to finalize site planning and operational practices on a site-wide basis, I do not feel it is appropriate to grant the waiver at this time.

Fiscal Issues

A number of commenters have urged me to require DEM to analyze in greater detail the economic viability of the housing component of the project, and even to demonstrate that the project will not have adverse economic impacts upon the Town of Adams and the Berkshires region. These concerns are outside of the jurisdiction of the MEPA review process. The enabling legislation for this project, Chapter 676 of the Acts of 1985, authorized the development of a "regional economic facility area" subject to an inclusive public master planning process. DEM has fulfilled the requirement of the DEIR Certificate by providing on request copies of a detailed housing market study. In August 1998 DEM also provided a detailed package of financial information to the Advisory Council and the DEM Board. I further anticipate that DEM will shortly issue for public review and comment details of the ground lease agreement with the proponent. This will provide further information on fiscal issues relating to the project. In light of these actions, and taking note of the unequivocal support of the Town of Adams for the project, I will not presume to substitute my judgment on economic development matters. No further analysis of this issue is required in the FEIR, beyond the requirement in the DEIR Certificate to demonstrate that Phase I will be economically self-supporting.

Wetlands

A significant shortcoming in the DEIR was the failure to identify Riverfront Areas. The NPC contains a complete mapping of on-site wetland resources that satisfies the requirements of the DEIR Certificate. The revised site plan has significantly reduced the number of wetland crossings from 76 to 47. The FEIR should address the specific questions raised by various commenters, including DEP and DEM, with respect to wetlands impacts.

Water Supply

Another significant issue in the DEIR was the potential impact of on-site wells, both for potable and irrigation water, on wetlands. In response, the NPC now proposes to eliminate those impacts by relying upon Town water. While most of the comments are supportive of this change, the FEIR should confirm whether the project's water demands can be met within the Town's currently permitted total withdrawals.

EOEA# 11083 Project Change Certificate October 15, 1999

Endangered Species

I note that the comments of the Natural Heritage and Endangered Species Program express continued concern with the Integrated Pest Management Plan and Turf Management Plan for the project, particularly with respect to endangered species. The proponent should consult further with NHESP and the Final EIR should contain an IPM that is tailored to the site and will ensure protection of rare and endangered species.

Response to Comments

The Final EIR should respond to the issues raised in the attached letters of comment, as well as to the issue highlighted above, and to all issues identified in the DEIR Certificate to the extent they are still applicable.

Section 61 Findings

The FEIR shall contain proposed Section 61 Findings that incorporate all proposed mitigation measures, including the timing and identity of the responsible party. I expect the Section 61 Findings to include a commitment to long-term monitoring and management protocols that will ensure the operation of the entire project upon sustainable development principles.

October 15, 1999
DATE

Bob Durand

Comments received :

Aceto, Thomas
Adams Selectmen
Adams Town Administrator
Appalachian Mountain Club
Berkshire Regional Planning Commission
Blazetewski, Steve
Brevet, Betty
Browne, Charlie
Carver, David

EOEA# 11083 Project Change Certificate October 15, 1999

Center for Ecological Technology
Claremont, Larry
Collins, Philip
Crow, Stephen
Department of Food and Agriculture
DeRosa, John
Division of Fisheries and Wildlife
Dobrowolski, Ann
Driscoll, Edward
Dubick, James
Dubis, Kevin
Gargan, Raymond
Goodman, Elisabeth
Hutchinson, Paul
Janik, Stanley and Isabel
LaPort, Victor
Leitch, Robert
Linscott, Heather
LoPresto, Wayne
Marchio, Jean
Massachusetts Association of Conservation Commissions
Massachusetts Audubon Society (2)
Moncecchi, Alita
Moncecchi, Mike
Moncecchi, William
Nowak, Joseph
Noyes, Nick and Leslie (2)
Northern Berkshire Chamber of Commerce
O'Brien, Nancy
Phelps, Mason
Post Card Form Letter (81 copies)
Scully, Caroline
Senator Nuciforo
Shaw, Frank and Helen
Sierra Club
Sniezek, Pauline
Trimarchi, John
Trimarchi. John
Weatherbee, Pamela
Wojtaszek, Mary Ann

BD/rf

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street, Boston, MA 02202

ARGEO PAUL CELLUCCI
GOVERNOR
TRUDY COXE
SECRETARY

Tel: (617) 727-9800
Fax: (617) 727-2754
http://www.magnet.state.ma.us/envir

September 16, 1998

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	:	Greylock Center
PROJECT MUNICIPALITY	:	Adams
PROJECT WATERSHED	:	Hoosic
EOEA NUMBER	:	11083
PROJECT PROPONENT	:	Greylock Management Associates / Department of Environmental Management
DATE NOTICED IN MONITOR	:	July 22, 1998

As Secretary of Environmental Affairs, I hereby determine that the Draft Environmental Impact Report submitted on this project adequately and properly complies with the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and with its implementing regulations (301 CMR 11.00). The Draft EIR is consistent with the level of detail appropriate to this stage of project design. I acknowledge, however, that commentors have made some very cogent comments on the current proposal, and pointed out certain shortcomings in the Draft EIR. To ensure that this project will meet the high standards of environmental protection and sustainable development that it demands, I am requiring that the proponent and DEM provide considerably greater detail and analysis on a range of issues in the Final EIR, and that they continue the ongoing process of open public consultation and comment.

This project is a public/private partnership proposal for a mixed use development on 1,063 acres of public land, immediately adjacent to Mount Greylock State Reservation. The proposal involves the development of a multi-use recreational and educational complex that includes an environmental education center, an 18 hole golf course and appurtenant buildings, a 172 room resort hotel and conference center, up to 300 residential units clustered in a village complex and in rustic mountain cottages, a 28 room bed-and-breakfast facility, and many additional recreational amenities including trails and camping sites.

RECYCLED PAPER

This Draft EIR arises out of a broader and longer process of public planning. The Greylock Center Advisory Committee (CAC) has worked closely with DEM since 1991 to develop a binding Master Plan, most recently amended and readopted by DEP in 1996 (Master Plan), which provides the guidelines for this proposal. The final development proposal may require further amendments to the Master Plan, followed by the execution of long-term agreements between the proponent and DEM. Because of this public planning process, this Draft EIR is to some extent a work in progress. The development plan is likely to undergo further review and refinement after the conclusion of the MEPA process. At the same time, the Final EIR must satisfy me that, at that stage in the process, the proponent has taken all steps to ensure a truly sustainable project result. Moreover, although the proposal shown in the Draft EIR appears to be in substantial accordance with the Master Plan, the Final EIR should contain a detailed discussion of how the proposal satisfies each of the Master Plan's requirements.

The proponent has asked for a waiver to allow the environmental education center to proceed prior to completion of the Final EIR. The waiver request is contained in the cover letter for the Draft EIR and presents the proponent's arguments for granting the waiver. While I acknowledge those arguments and recognize the value of this proposal to the overall project, there is a need for further elaboration and detail on a variety of potential environmental impacts with regard to the entire project that makes granting such a waiver for early action impossible at this time. I hereby deny the requested waiver.

I received many thoughtful comments on this Draft EIR and I expect that they will receive equally thoughtful responses. Several commentors have argued that the Draft EIR lacks sufficient detail regarding certain potential environmental impacts, particularly upon Riverfront Areas, endangered species, and issues related to the golf course, and that a Supplemental Draft EIR should be required. I find that the Draft EIR has addressed nearly all of the issues required by the scope at a sufficient level of detail <u>for this stage in the project design</u>. I am confident that further elaboration and detail, which I have expressly required in a number of areas in this certificate, can be properly provided in a Final EIR. Should the Final EIR fail to provide the required information, a Supplemental Final EIR may be required at that time.

Because of its location, because of the direct involvement of the Department of Environmental Management (DEM), operating

under the legislature's mandate for the project set forth in Chapter 376 of the Acts of 1985, and because of the history of failed previous development proposals for the site, this project must be held to high environmental standards. The proponent and DEM have expressed their commitment to principles and practices of sustainable development in carrying out this project. Sustainability cannot be just an add-on to a conventional site plan; sustainability needs to be at the core of the design, construction, operation, and management of the Greylock Center project.

Inter-agency consultation and opportunities for public comment will be essential to the success of this project. I expect that the proponent and DEM will continue to consult closely with the Department of Environmental Protection (DEP), the Natural Heritage and Endangered Species Program (NH&ESP), other agencies and interested parties, and members of the public, and that they will offer ongoing opportunities for review and comments during the development and refinement of the materials required for the Final EIR. I am also requiring that the proponent and DEM hold at least one public meeting prior to the submission of the Final EIR.

MODIFIED SITE PLAN

Principles of sustainability must inform this project at all levels, and not just at the micro-scale. The Draft EIR describes in limited detail a "modified site plan," developed in response to several working sessions with the Center for Ecological Technology (CET). The Draft EIR does not, however, subject the modified site plan to the full alternatives analysis. It is clear, even from the limited description in the Draft EIR, that the modified site plan would significantly improve the sustainability of the design by clustering development toward the center of the site, leaving larger and more contiguous undisturbed areas around the perimeter. The CET, in its comment letter, suggests that further site planning benefits may be attainable beyond those shown on the modified site plan -- notably, a more compact configuration for the golf course. I expect the proponent to fully study the modified site plan concept, as it may be further developed, as the preferred alternative in the Final EIR.

PROJECT PHASING

Although the Draft EIR does not contain any specific information on project phasing, I understand that the initial

phase of development is anticipated to include the golf course, the environmental education center, and only a limited number of residential and/or hotel units. The balance of the project will be completed based upon market demand. Such a phased development approach should be reflected in the construction of the project infrastructure as well. The proponent and DEM are currently faced with mitigating the impacts of incomplete development attempts from the past. It will be important to learn from those mistakes, rather than repeating them. The Final EIR must contain a phasing plan for the build-out of infrastructure as well as structures, in a manner that minimizes environmental disruptions and unnecessary costs, and that can take advantage of advances in environmental technology as the project progresses. There need to be enforceable commitments on the part of the proponent and DEM that no on-site construction will occur until full design and analysis of the applicable phase has been completed, and its fiscal feasibility has been demonstrated.

FISCAL ANALYSIS

A number of commentors raised questions about the economic viability of the housing component of the project, and whether the entire project would stand or fall with it. Under the Master Plan, residential uses are allowed only so long as certain environmental, programmatic, and financial conditions are met. The ENF Certificate suggested that DEM, at its discretion, might include a fiscal analysis of the project in the EIR. I understand that a market analysis of the residential component of the project has been completed, and that the information it contains has been provided to at least some of the commentors. DEM should make the Market Study available, upon request, to all commentors upon the project. Moreover, both for reasons of fiscal feasibility and because of the phasing issues discussed above, DEM needs to provide assurances in the Final EIR that the initial project phase can be economically self-supporting.

RIVERFRONT AREAS

The Draft EIR did not define the boundaries of the Riverfront Areas or wetlands buffer zones on the site. Consequently, it is not possible to determine the degree to which alterations to these protected resource areas might be an issue. The proponent should promptly prepare and distribute to all commentors a revised site plan and accompanying text that identifies all Riverfront Areas and buffer zones and identifies activities that might be located in those areas. In the event that alterations of Riverfront Areas are proposed, the Final EIR

should show either how they can be relocated outside the Riverfront Area, or why they cannot be relocated and why they will not result in substantial impacts to those areas. Additionally, insofar as the alternatives analysis for work in Riverfront Areas might be required by the Wetlands Protection Act, the Final EIR should provide those analyses for review by the agencies and the public.

ENDANGERED SPECIES

The NH&ESP has commented that it is unable to evaluate the impact of the proposed project on rare and endangered species and native brook trout on the Greylock Center site due to a lack of detailed information on water quality impacts, resulting from trail construction and use and from fertilizer and pesticide use, particularly on the golf course. Additionally, NH&ESP is unable to evaluate the effects of the proposed development on water temperature in perennial streams on the site and, consequently, on temperature-sensitive species. Water temperature can be significantly affected by clearing of overstory vegetation that shades streams, as well as by creation of impervious surfaces. The Final EIR should provide additional information, prepared in consultation with the NH&ESP, that can allow the evaluation of the proposal in terms of its impacts on rare species, water quality, and temperature. (These impacts should be reviewed in tandem with the review of impacts upon vegetation within Riverfront Areas.)

GOLF COURSE

The proponent and DEM have made a commitment to provide state-of-the-art sustainable golf course design and management practices in this project that could serve as a model for other sites. As noted above, CET's comment regarding a more compact course layout should be examined in the alternatives analysis of the Final EIR. In addition, I expect detailed, site specific information on the Integrated Pest Management (IPM) plan, golf course irrigation and its hydrogeologic and habitat impacts, and the use of indigenous vegetation.

STORMWATER MANAGEMENT

The Final EIR should include additional information on the proposed stormwater management system to be used at the site. Many of the water quality issues raised in the comments are directly related to stormwater and the changes in stormwater patterns and quality that result from land alteration and

development. While I acknowledge that the Draft EIR contains a schematic plan and commitments to meet the Stormwater Management Policy standards, the report does not contain sufficient detail to assure the agencies that this will be the case. I expect that the proponent will consult with the DEP, so that the Final EIR will provide the necessary information.

PRESERVATION OF AGRICULTURAL LAND

The Final EIR should address in more detail the project's conformance with the objectives of Executive Order 193, regarding the preservation of agricultural land. The Final EIR should spell out the full range of mitigation measures that will be incorporated into the project. Such measures should reflect ongoing consultation with the Department of Food & Agriculture.

The Final EIR should provide responses to the issues raised in the attached comment letters, insofar as those comments relate to issues identified in the scope issued on the Environmental Notification Form dated May 12, 1997. The Final EIR should also contain draft Section 61 findings, documenting enforceable actions and commitments on the part of DEM and other affected agencies, including assurances that all identified mitigation measures and sustainable development management practices will be fully implemented.

The Final EIR should be distributed to those who received the Draft EIR and several copies should be placed in a public place in the Town of Adams for use by those interested parties who are not included in the distribution.

September 16, 1998
Date

Trudy Coxe, Secretary

Comments received :

Adams Town Clerk
Adams Town Administrator
Adams Department of Community Development
Adams Selectmen
Adams Treasurer
Aliborg, Rick

Anthony, Ralph
Appalachian Mountain Club
Baribeau, Robert
Berkshire Regional Plannng Commission
Berkshire Natural Resources Coucil, Inc.
Bissaillon, David
Blazejewski, Steve
Bradley, Scott
Bresett, Betty
Brewer, Evelyn
Cafaro, Tony and Corinne
Carlson, Nancy
Center for Ecological Technology
Clairmont, Larry
Damiami, Dick
Department of Environmental Protection WERO
Department of Food and Agriculture
DeRosa, John
Division of Fisheries and Wildlife
Dupras, Clara
Garton, Nancy
Gradziel, Susan
Gradziel, James et.al (petition: 23 names)
Gradziel, Jim
Greylock Management Associates, Inc.
Groves, Alexander
Hobart, Fred
Hoosic River Watershed Association
Hoosic Basin Team
Hutchinson, Doris
Jozefiak, Al
Justice, Sandi
Kelley, Earl
LaPort, Victor
Leitch, M & M Robert
Mack, A.
Mack, Ellen
Marchio, Jean
Marlow, Brian
Massachusetts Audubon Society
Massachusetts Sierra Club
Massachusetts Association of Conservation Commissions
McBride, Anthony
Meacham, Helen
Meczywor, Barbara
Moore, Eric
Mulkey, James, Jr.

Myer, Linda
Nadeau, Sheri (Form card: 49 copies)
Natural Heritage and Endangered Species Program
Nature's Classroom
Nowak, Joseph
Nowak, James
Noyes, Nick and Leslie (9-4-98)
Noyes, Nick and Leslie (9-6-98)
O'Brien, Nancy et.al.
Phelps, Mason
Pinsonnault, Bernard
Riverways Program
Rowley, Claire
Samson, Christopher and June
Schwartz, Susan
Schwarzer, Teisha
Selectman Wilk
Skoglund, Thomas and Robin
Sniezek, Pauline
Snyder, Susan
Solari, Cheryl and Christopher
Sookey, David et.al.
Suprenowicz, Michael
Swann, G.
The Berkshires Visitors Bureau
Trout Unlimited
Visiting Nurse Association & Hospice of Northern Berkshire, Inc.
Weatherbee, Pamela
Wells, John
Wilk, Matt

TC/rf

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street, Boston, 02202

WILLIAM F. WELD
GOVERNOR
ARGEO PAUL CELLUCCI
LIEUTENANT GOVERNOR
TRUDY COXE
SECRETARY

Tel: (617) 727-9800
Fax: (617) 727-2754

May 12, 1997

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS ON THE ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: Greylock Center
PROJECT LOCATION	: Adams
EOEA NUMBER	: 11083
PROJECT PROPONENT	: Greylock Management Associates / Department of Environmental Management
DATE NOTICED IN MONITOR	: March 28, 1997

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and Sections 11.04 and 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that the above project requires the preparation of an Environmental Impact Report.

This project is a public-private development proposal to provide a significant recreational and educational amenity on 1,063 acres of land adjacent to Mount Greylock. The development program is based on the Greylock Center Master Plan prepared by the Department of Environmental Management (DEM) in 1994 and amended in 1996. The program includes an 18 hole golf course, nordic ski trails, a 200 room hotel and conference center, a nature center, up to 300 residential units and other amenities such as a campground, stables and a soccer field. The project includes a commitment to sustainable development practices in design, construction, operation and environmental programming.

DEM acquired the project site in 1989 pursuant to the provisions of Chapter 676 of the Acts of 1985. There had been several proposals to develop the land prior to acquisition by DEM, including Heritage Greylock for which an Ervironmental Impact Report (EOEA# 5499) was prepared, but none of them were implemented. All the previous proposals were significantly larger than the current proposal.

100% RECYCLED PAPER

While the current program is based on the Master Plan, it is far from final. I expect that the EIR process will assist in further refining the proposal by allowing more detailed design to be based on additional environmental data generated for the EIR. These refinements should further environmental protection and enhancement.

The project will require a variety of permits from state and federal agencies and will receive public funding thereby giving broad jurisdiction to this review. The project is categorically included for preparation of an Environmental Impact Report (EIR) pursuant to 301 CMR 11.25 (1), (8) and (19).

The required EIR should follow the outline contained at 301 CMR 11.07 and should address the following specific issues.

PROJECT DESCRIPTION AND GOALS

This section should provide a detailed description of the proposed project. The description should clearly identify the proposed development program and the locations of various program elements.

This section should also identify the goals of the project and how these goals will be met by the proposed program. It should also discuss the stated goal of sustainable development and how that sustainability will be met.

ALTERNATIVES ANALYSIS

The EIR should contain a detailed history and description of the Master Planning process. This should include a summary of the mandates contained in Chapter 676 of the Acts of 1985 and a discussion of how the proposed project meets those mandates.[1]

It should also summarize previous development proposals and present the range of alternatives that have been considered, including the no-build, and a discussion of how the selected proposal is superior to the others in terms of meeting the mandates of Chapter 676, environmental protection, and sustainability.

---

[1] Many commentors have argued that the EIR should contain a fiscal analysis of the proposal. While I have no authority to require such an analysis under MEPA, I offer DEM the opportunity to include an analysis in the EIR at its discretion.

TRAFFIC

This project is expected to generate up to 3,700 vehicle trips per day. While much of this traffic is likely to be off-peak, this much traffic is likely to have an adverse effect on the existing transportation system. Primary access to the site will be from Route 8 to West Road to either West Mountain Road or Gould Road. With the exception of Route 8, these roads are currently local roads with limited capacity.

The EIR shall contain a complete description of the access routes, including roadway widths, side obstructions and other capacity limiting factors, an assessment of the ability of the roads to accommodate the increased traffic and an identification of any improvements that might be required. If improvements are required, the EIR should present an assessment of the impacts of those improvements.

The EIR shall contain a complete traffic analysis prepared in accordance with the EOEA/EOTC Guidelines for traffic analyses. The study should be performed on the following intersections:

West Road and Gould Road
West Road and West Mountain Road
West Road and Maple Street
West Road and Notch Road
Route 8 and Friend Street
Route 8 and Valley Street
Route 8 and Maple Street
Route 8 and Glenn Street
Route 8 and River Road
Route 8 and Fred Mason Road
Route 8 and Route 116

The Environmental Notification Form indicated that additional access to the site might be provided by upgrading Basset Brook Road to connect West Mountain Road to West Road. Should this connection be considered in the proposal, it should be analyzed along with the others.

In order to minimize traffic congestion to the greatest extent possible, the EIR should examine the potential for traffic demand management strategies. These strategies could include employee ridesharing and alternative transportation such as courtesy vans or shuttles.

WETLANDS AND DRAINAGE

The EIR shall contain a plan at a reasonable scale showing the delineated boundaries of all wetland resource areas, including riverfront areas and buffer zones on the site. This plan should be accompanied by a narrative description of each wetland resource area that identifies the significance of the resource values of each wetland area including: public and private water supplies, flood control, storm damage prevention, prevention of pollution and protection of fisheries and of wildlife habitat.

The Master Plan project should then be superimposed on this resource map and all areas of altered wetlands and buffer zones should be identified. The altered wetlands and buffer zones should also be included in a table that presents the area altered for each and a cumulative total. Proposed activities, including construction mitigation, erosion and sediment control systems, wetland crossing plans for roadways and drainage must be evaluated.

The EIR should include a wetland replication plan for all altered wetlands. This plan should include replication locations, elevations, typical cross-sections and the hydrology of the areas to be altered and replicated. The plan should also identify plant species, construction sequencing and a discussion of how compliance with applicable performance standards will be achieved.

The EIR should also include a description of the proposed stormwater management system for the project The EIR should explain the objectives of the system and should identify, at a minimum, the approximate locations of major features of the system. This system should be developed in accordance with the DEP Stormwater Management Policy and should include the Best Management Practices identified in the Stormwater Manual.

The Bassett Brook Road upgrade will occur within a sensitive ravine environment. If this proposal is to be pursued, the EIR must include an analysis of alternatives to ensure that the proposal is viable and environmentally sound.

This section should also include a narrative that explains why each wetland alteration is required and what mitigation is proposed to minimize impacts to wetlands.

STATE LISTED SPECIES AND HABITATS

The Natural Heritage & Endangered Species Program (NHESP) has identified occurrences of 15 state listed species within the Greylock Center property. Any of these species could be endangered by inappropriate or careless development. The EIR should identify what means will be used to avoid direct and indirect impacts on these species. Indirect impacts should include water withdrawals, water quality changes resulting from remote activities and human activities. The attached comments of the NHESP will be useful in developing the information for this section of the EIR. I suggest consultation with NHESP to develop the required analysis.

GOLF COURSE

The current proposal includes an 18 hole golf course. The course appears to have been designed to avoid environmentally sensitive areas. The EIR should identify environmentally sensitive areas that are in close proximity to the golf course and show how they will be protected from maintenance activities on the course such as fertilizing, pest control, etc., and from the golfers themselves entering the areas searching for balls.

The EIR should also present a complete Integrated Pest Management Plan. This plan should include information on the use of species that are resistant to pests and to drought and information on what environmentally friendly fertilizers, pesticides and other agents will be used.

The golf course will also include an irrigation system for watering tees and greens and fairways. Such a system normally delivers more than 100,000 gallons per day (gpd) for 18 holes. The EIR should identify the source(s) of the water and provide an assessment of the impacts of these withdrawals on sensitive resources, including state listed rare species.

HISTORIC AND ARCHAEOLOGIC RESOURCES

The EIR should contain a section that identifies any historic resources on the site or that might be affected by activities on the site. Additionally, the proponent should consult with the Massachusetts Historic Commission (MHC) with regard to the potential for archaeological resources in areas of the site that will be altered and should confirm, in the EIR, that such consultation has occurred and that any surveys that are conducted are approved by the MHC.

WATER SUPPLY AND SEWAGE DISPOSAL

This project is expected to use approximately 195,000 gpd of water and generate approximately 165,000 gpd of sanitary waste. The EIR should identify the source of the water and the route of the water mains delivering the water to the various facilities. Similarly, the EIR should identify the disposal option(s) for sanitary waste and the route of the sewers carrying waste to the disposal site. This section should also contain an assessment of the capacities of the water supply system and the sewage disposal system and their respective abilities to accommodate the project.

If snowmaking is proposed for the nordic trails or snowmobile trails, the EIR should identify the source of water for snowmaking and provide an assessment of the impacts of that water withdrawal on resources at the withdrawal point.

AGRICULTURE

The requirements of Executive Order #193 apply to this project because of the state funding involved. As a result, losses of agricultural land must be mitigated. The EIR should contain a description of the proposed mitigation plan. I suggest consultation with the Department of Food and Agriculture during development of this plan.

EXECUTIVE ORDER 385

The provisions of Executive Order 385 apply to this project because of the use of state funds. The EIR should include a discussion of consistency of the project with that order and with regional and local planning.

MITIGATION

The EIR should include a summary of mitigation proposed for the project. The summary should be organized by topic, for example, traffic, wetlands, agriculture and should include a preliminary implementation schedule for all proposed mitigation and a description of the responsible party for each mitigation measure.

COMMENTS

I have received many excellent comments on this ENF. I expect that the EIR will contain complete and detailed responses to all the issues raised in these comments.

May 12, 1997
Date

Trudy Coxe, Secretary

Comments received :

Adams Finance Committee
Ames, Tad, et.al.
Berkshire County Regional Planning Commission
Berkshire Natural Resources Council, Inc.
Blazejewski, Stephen
Bresett, William
Bresett, Betty
Bresett, Betty (4-14-97)
Brewer, Evelyn
Brustle, Jean
Butler Wholesale Products, Inc.
Childs, Nancy
Coussoule, Mrs. John, et.al.
Davison, Keith
Department of Food and Agriculture
Department of Environmental Protection WERO
Department of Environmental Protection OWM
Foster, Michael
Goodman, Elisabeth
Gore, Joan
Gradziel, Susan
Gradziel, Jim
Harte, Eva
LaPort, Victor
Leitch, Mr. and Mrs.
Mack, Ellen
Marchio, Jean
Massachusetts Sierra Club
Massachusetts Association of Conservation Commissions
Massachusetts Audubon Society

Mitchell, Ron
Natural Heritage & Endangered Species Program
Nowak, Joseph
Nowak, James
O'Brien, Nancy
O'Rourke, Kathleen
Pietras, Barbara
Raimer, Bruce and Joan
Robert, Connie
Samson, Christopher and June
Senecal, John and Ann
Shaw, Helen
Shaw, Frank
Sherman, Joyce
Sniezek, Leonard and Pauline
Solomon, Barbara
Stachura, Rosemarie
Trimarchi, John (4-10-97)
Trimarchi, John (4-15-97)
Trimarchi, James
Villane, Dominick
Wandrei, Douglas
Wandrei, Dorothy
Weatherbee, Pamela
Winaski, Edward

TC/rf

1.0 PROJECT OVERVIEW

1.1 Project Description and MEPA Status

Greylock Center is public-private development project proposed by the Massachusetts Department of Environmental Management (DEM), owner of the site since 1989, and Greylock Management Associates (GMA), the private developer selected to assist in the implementation of the project. The 1,063 acre Greylock Center property was purchased by the Commonwealth of Massachusetts in accordance with Chapter 676 of the Acts of 1985, a legislative action which enabled the state to acquire the land, and which authorizes the development of recreational, residential and commercial facilities on the property.

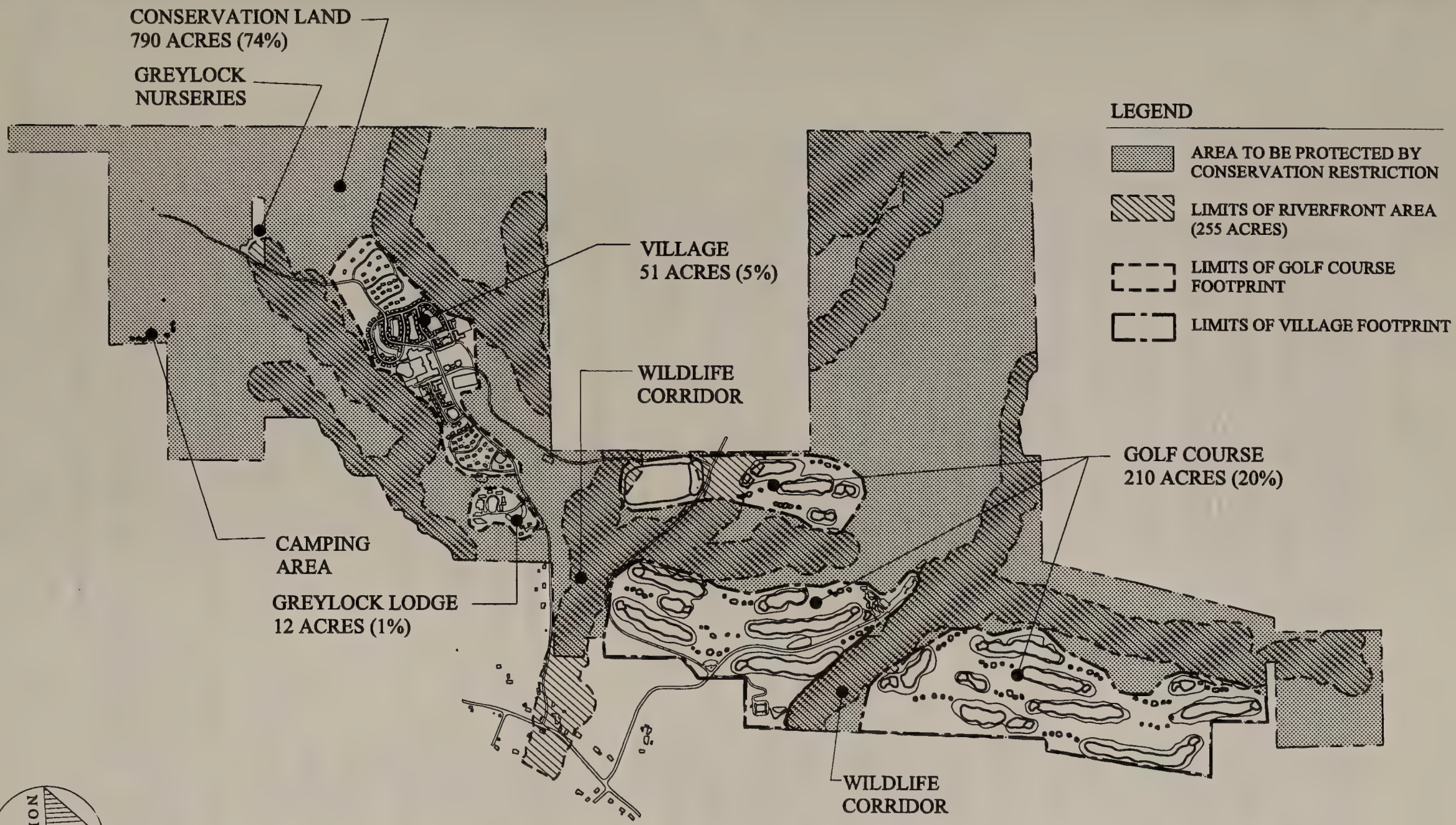
The MEPA file number assigned to the Greylock Center Project is #11083. The Draft Environmental Impact Report (EIR) for the project was filed in June 1998, and a Notice of Project Change (NPC) was filed in August 1999. The present Final EIR (FEIR) responds to the Secretary's Certificate on the DEIR, as modified by the NPC Certificate.

1.2 Overview of Program Components and Infrastructure

A site plan illustrating the location of all Greylock Center program components is presented as Figure 1-1, which is contained in the map pocket following this section. A brief description of the various program components follows.

1.2.1 Conservation Land

Of the 1,063 acre property, 790 acres (approximately 74% of the site) will be permanently protected for open space and wildlife habitat purposes under a Conservation Restriction to be granted to the Town of Adams Conservation Commission, as further described in Section 2.4. Figure 1-2 identifies the footprint of areas that will be left largely undeveloped. In that it is recognized that recreational activities and natural resources/wildlife habitat management are often not compatible uses, a Stewardship Plan has been developed for the property, which recognizes particularly sensitive resources and habitats, and limits public access to such areas. This Stewardship Plan is introduced in Section 6, and appears in its entirely in Appendix A.



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1" = 40'-0"
Date: January 24, 2000

Limits of Greylock Center Property to be Protected by Conservation Restriction

Figure 1-2

1.2.2 Golf Course

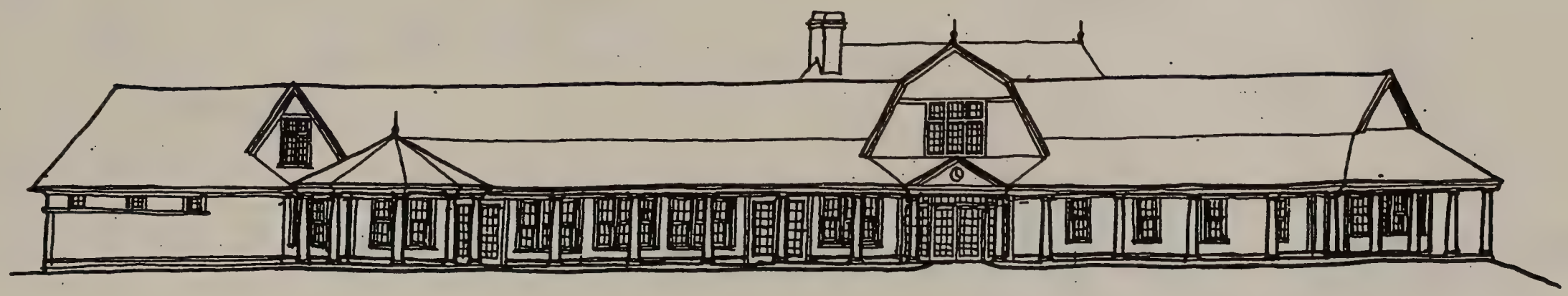
The Greylock Center 18-hole golf course has been designed by Hurdzan-Fry, an internationally respected golf design firm, known in particular for their environmentally responsive approach to developing golf courses. The proposed routing plan has been designed as a par 72 championship course with an overall distance of 6,963 yards. As discussed in both the NPC and this FEIR, the routing plan has been adjusted on numerous occasions to reduce encroachment into sensitive resources and habitats. While the NPC introduced a substantially re-worked layout for the course to minimize the overall footprint of golf activities, the FEIR presents refinements to that reduced footprint. This footprint now encompasses approximately 210 acres (approximately 20% of the site), which includes the driving range, clubhouse and maintenance facilities, and the areas that are between fairways, rather than just calculating the area of the fairways themselves. The 210 acre golf course footprint is indicated on Figure 1-2 and Architectural sketches showing elevations and floor plans of all golf course related structures are provided in Figures 1-3 through Figure 1-7. The golf course will incorporate use of native species in 'rough' areas, and will manage those areas between fairways to foster native flora and wildlife by implementing varied practices to sustain both herbaceous and woody vegetative communities (e.g. old field conditions, shrubland habitat, and forested areas). The golf course vegetation management plan for out-of play areas is described in the Greylock Center Stewardship Plan (Section 6 and Appendix A), while turf management for playable areas is addressed in the Integrated Pest Management Plan (also summarized in Section 6 and reproduced in Appendix B).

1.2.3 Greylock Village

The vast majority of building development will be concentrated into the 51 acre Greylock Village footprint (approximately 5% of the site), as previously shown in Figure 1-2. This tightly clustered configuration of roads, lanes and buildings will include the conference center/ hotel complex, the Greylock Inn, the Institute building, up to 300 residential units, commercial businesses geared toward serving guests and residents such as food services, recreational supplies and services, an artisan's center, and retail sales for locally produced goods. As indicated in Section 1.4, the build-out of the village will occur in a phased approach, with build-out directly reflecting market demand. Sustainable site planning, building construction techniques and operational strategies will be utilized for all buildings, as required by the Greylock Center Master Plan, and as approved by the Greylock Center Site and Building Design Committee. The village site plans presented in this report are illustrative site plans for analysis purposes. Final detailed plans will be presented to Town authorities for approval in response to market demand.



West (entry) Elevation - Mount Greylock Clubhouse

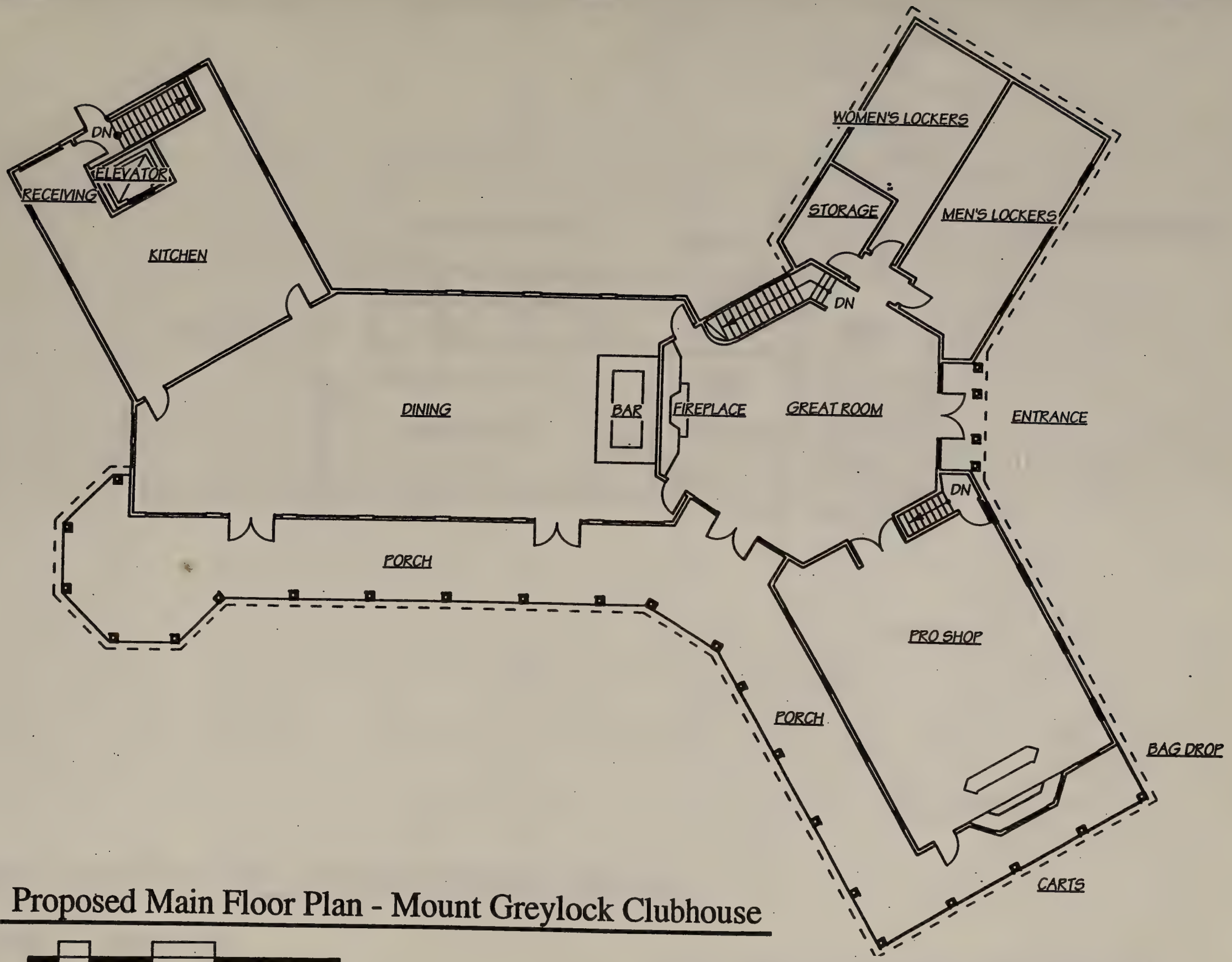


South Elevation - Mount Greylock Clubhouse



Olson Lewis & Dioli Architects and Planners, Inc.

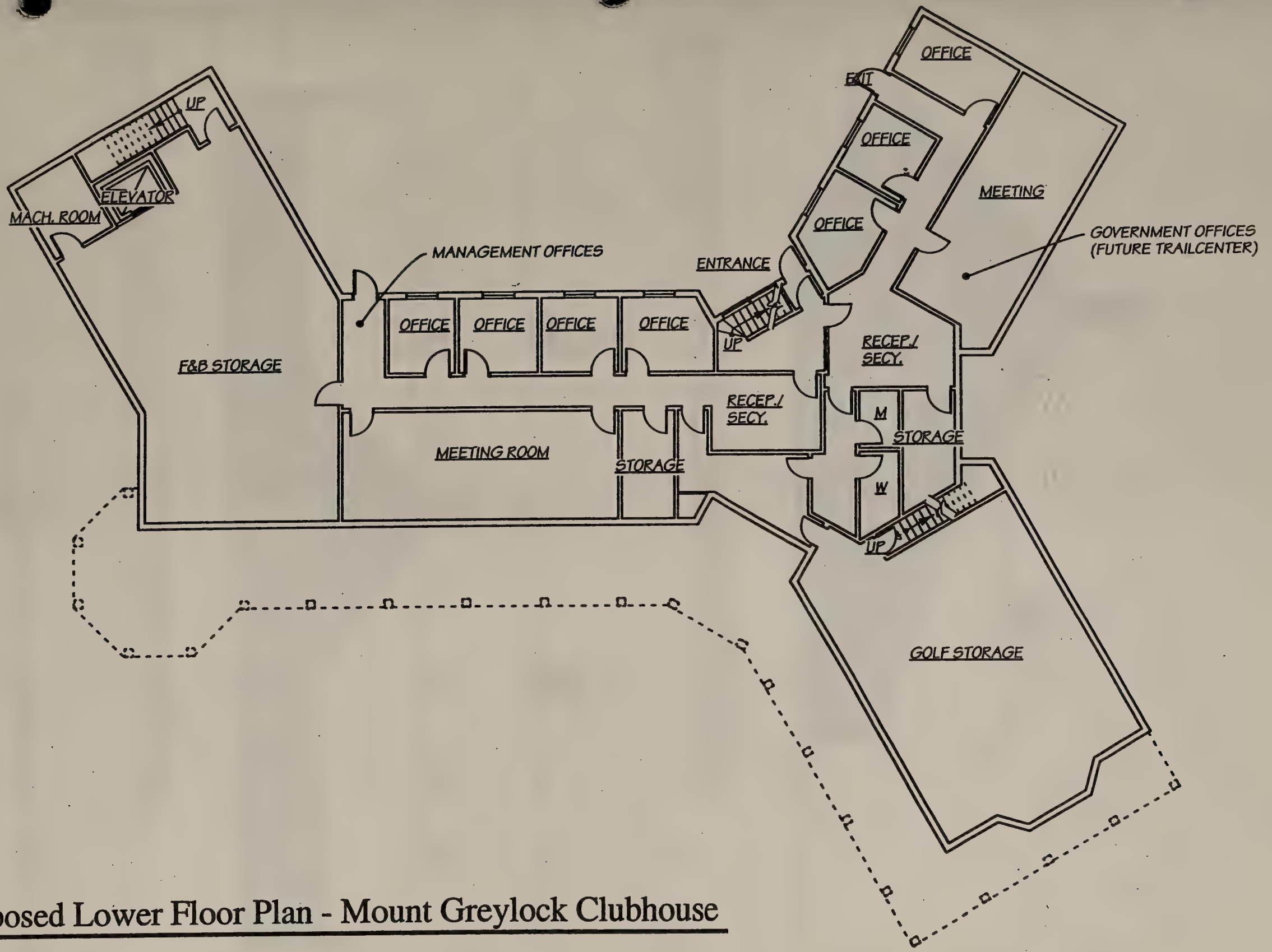
Figure 1-3



Proposed Main Floor Plan - Mount Greylock Clubhouse

Olson Lewis & Dioli Architects and Planners, Inc.

Figure 1-4



Proposed Lower Floor Plan - Mount Greylock Clubhouse

0 4 8 16 32 64

Olson Lewis & Dioli Architects and Planners, Inc.

Figure 1-5



Elevation-Mount Greylock Maintenance Building

SCALE: 1/16" = 1'-0"

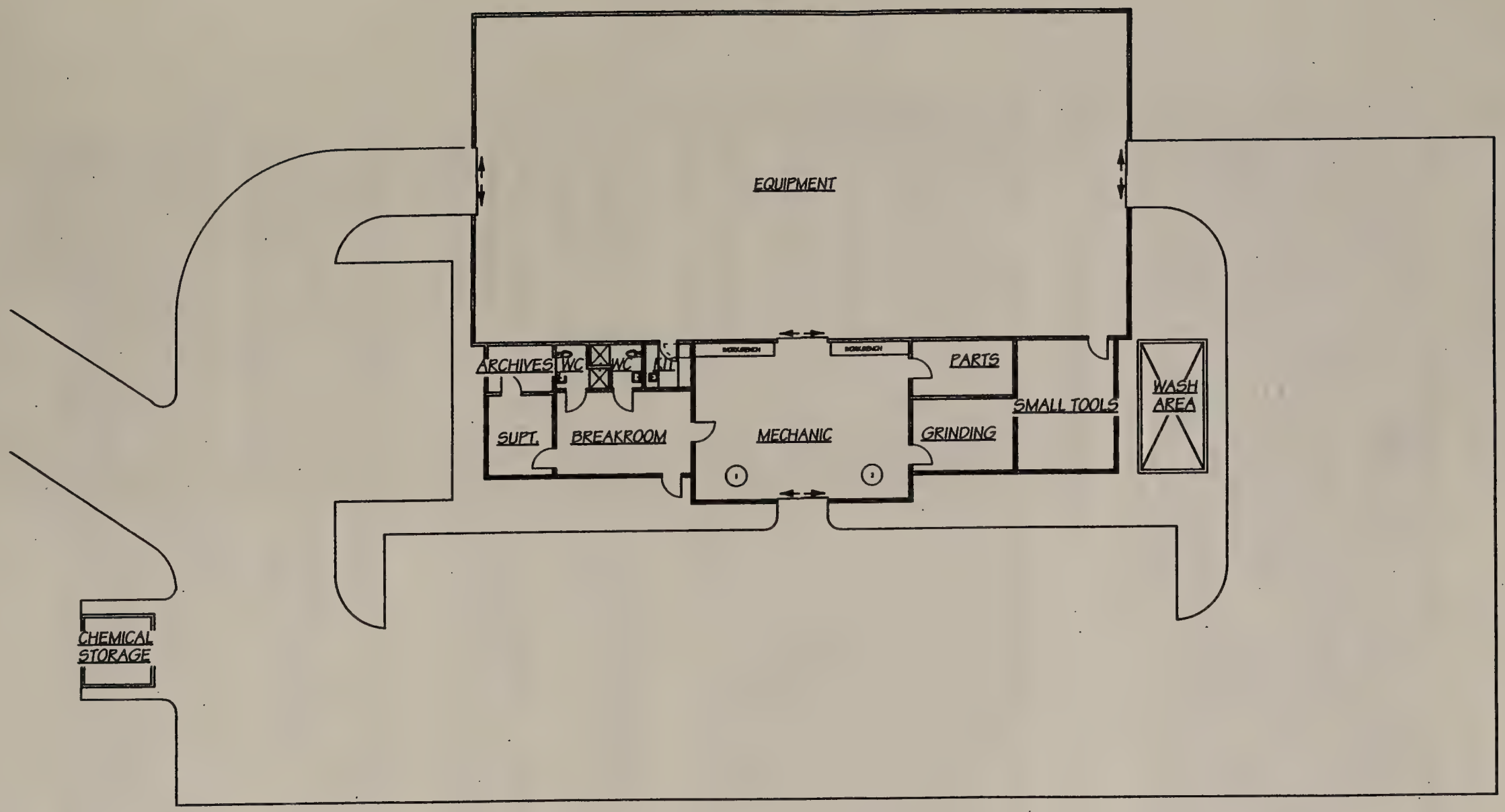


Elevation-Mount Greylock Maintenance Building

SCALE: 1/16" = 1'-0"

Olson Lewis & Dioli Architects and Planners, Inc.

Figure
1-6



Plan - Mount Greylock Maintenance Building

Olson Lewis & Dioli Architects and Planners, Inc.

Figure 1-7

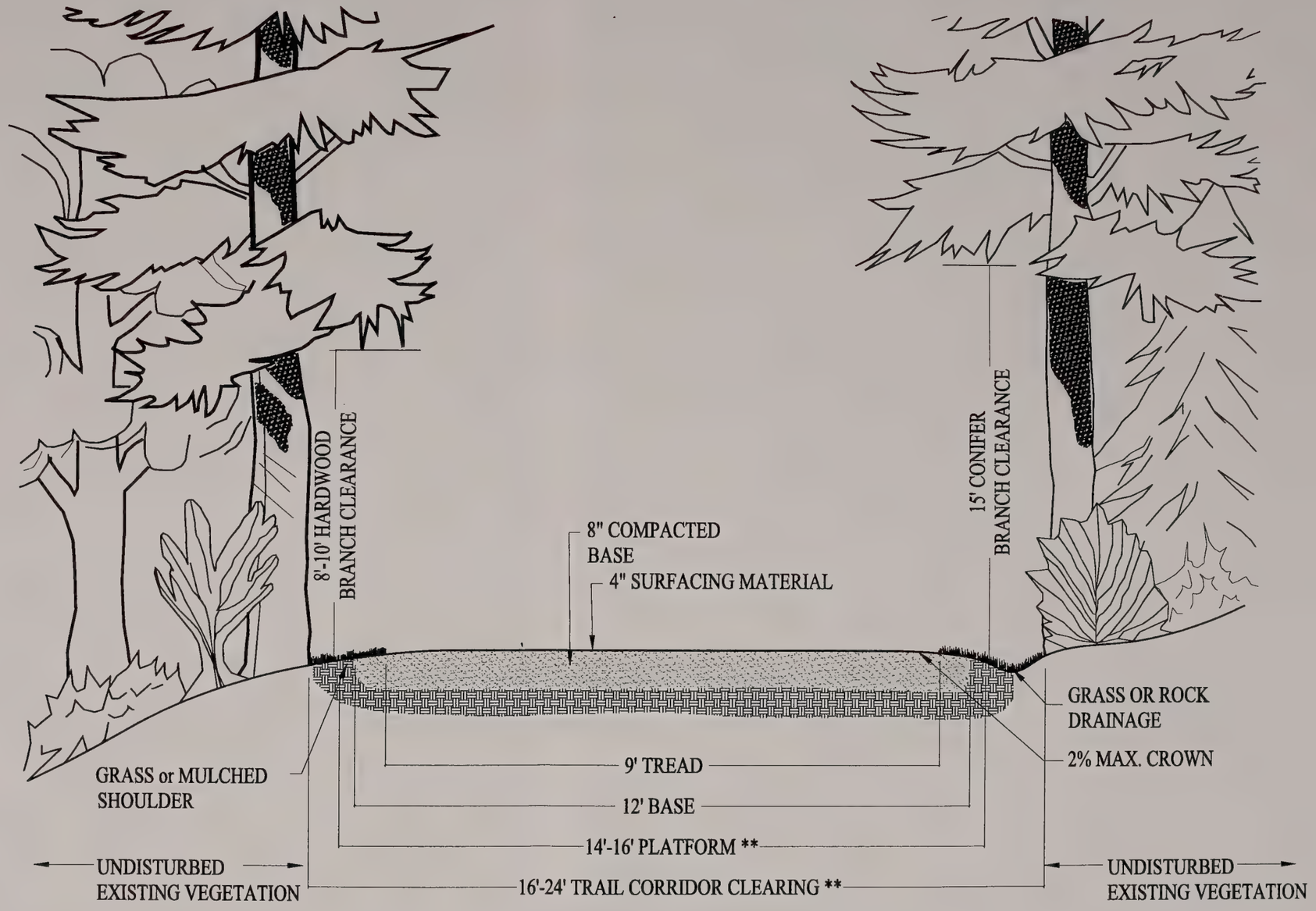
1.2.4 Greylock Lodge

Greylock Lodge, an educational facility which will serve Nature's Classroom as well as a variety of other non-profit entities, will be situated on a footprint of 12 acres, indicated on Figure 1-2. This building envelope includes five buildings in a campus-like configuration, and three private residential structures for staff. The campus buildings will include lodge-style guestrooms and meeting and dining accommodations for 200. Greylock Lodge, as one of the first buildings to be developed and situated at the gateway to Greylock Village, will showcase sustainable building construction and systems, described at length in the NPC. In addition, Greylock Lodge will utilize the entire Greylock Center property for nature education programs and learning opportunities.

1.2.5 Public Recreational Facilities

The Greylock Center development will offer a wide array of public recreational facilities, including an extensive multi-use trail system, skating, swimming, and sledding. The location of these recreational facilities is illustrated in Figure 1-1. The multi-use trail network will accommodate hiking, nordic skiing and mountain biking, and has been designed to share wetland crossings with the golf cart path network in the vicinity of the golf course to minimize impacts to sensitive resources. The majority of the trail surfaces will be pervious, with hardened surfaces introduced only in those areas where trails coincide with golf cart paths. This trail system consists of three basic categories of trails to accommodate different uses (e.g., hiking, biking and nordic trails), varying skill levels, and a variety of experiences. These are:

- Class I trails are designed to receive the highest amount of use and are predominately located near existing or proposed site amenities. Figure 1-8 illustrates the cross-section of a Class I trail.
- Class II trails are designed to involve more strenuous hiking and mountain biking experiences, and are predominately located in more remote portions of the Greylock Center site. Figure 1-9 illustrates the cross-section of a Class II trail.
- Class III ADA accessible trails are designed to allow visitors with disabilities to experience sensitive resources areas. An ADA accessible trail loop is provided around the central glen wetland complex, where a series of interpretive exhibits is proposed. Figure 1-10 illustrates the cross-section of a Class III ADA accessible trail.
- Class III trails will be constructed with the narrowest cross section to allow visitors to experience areas with sensitive natural resources while minimizing impacts to such resources. Class III trails are primarily located in the vicinity of the central glen wetland complex and as short connectors between other trail classes. Figure 1-11 illustrates the cross-section of a Class III trail.



** NARROWER CROSS-SECTION USED FOR WETLAND & RIVERFRONT AREAS.

GREYLOCK CENTER PROJECT

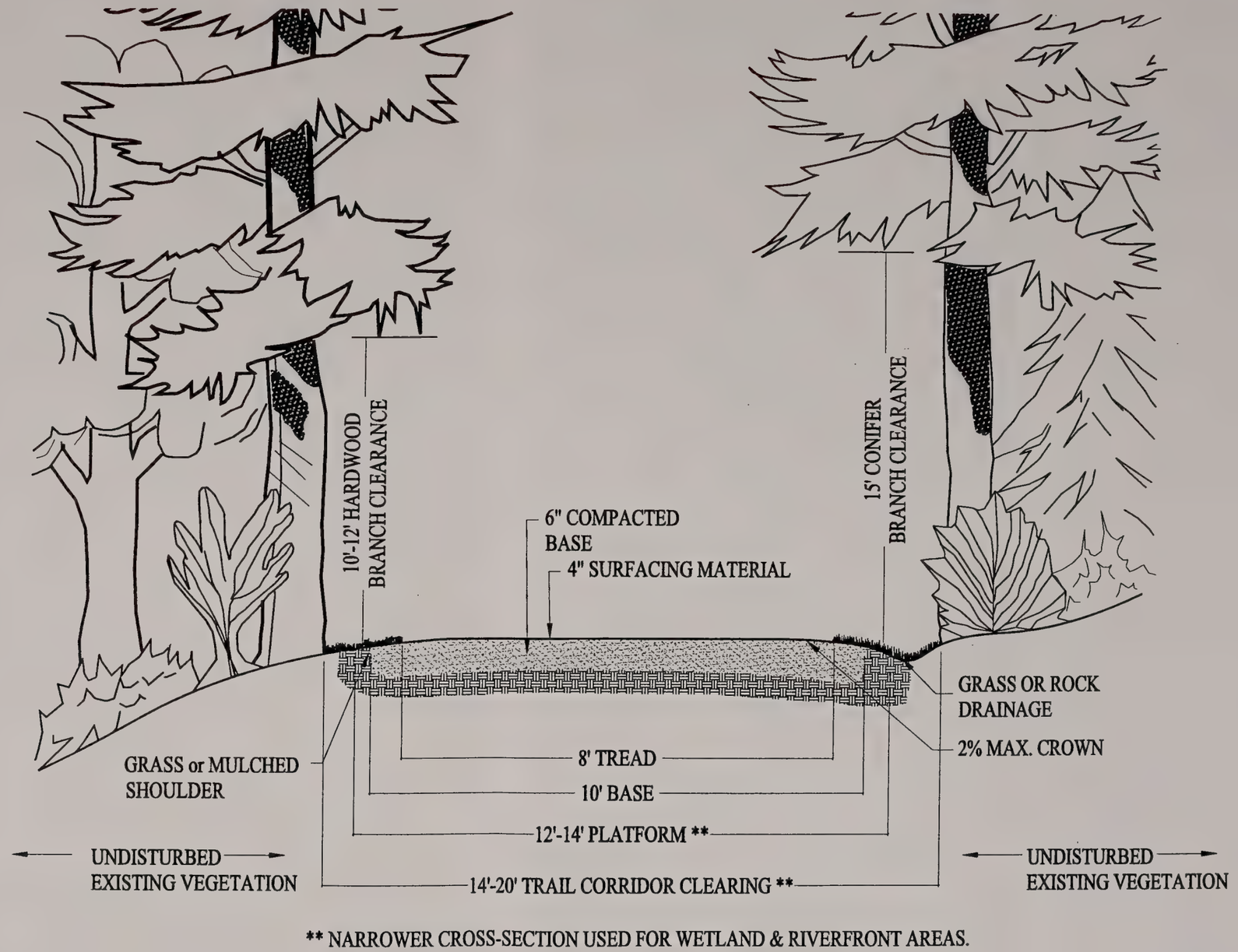
Massachusetts Department of Environmental Management
DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1/4" = 1'-0"
Date: January 24, 2000

Class 1 Trail Cross Section

Figure 1-8



** NARROWER CROSS-SECTION USED FOR WETLAND & RIVERFRONT AREAS.

GREYLOCK CENTER PROJECT

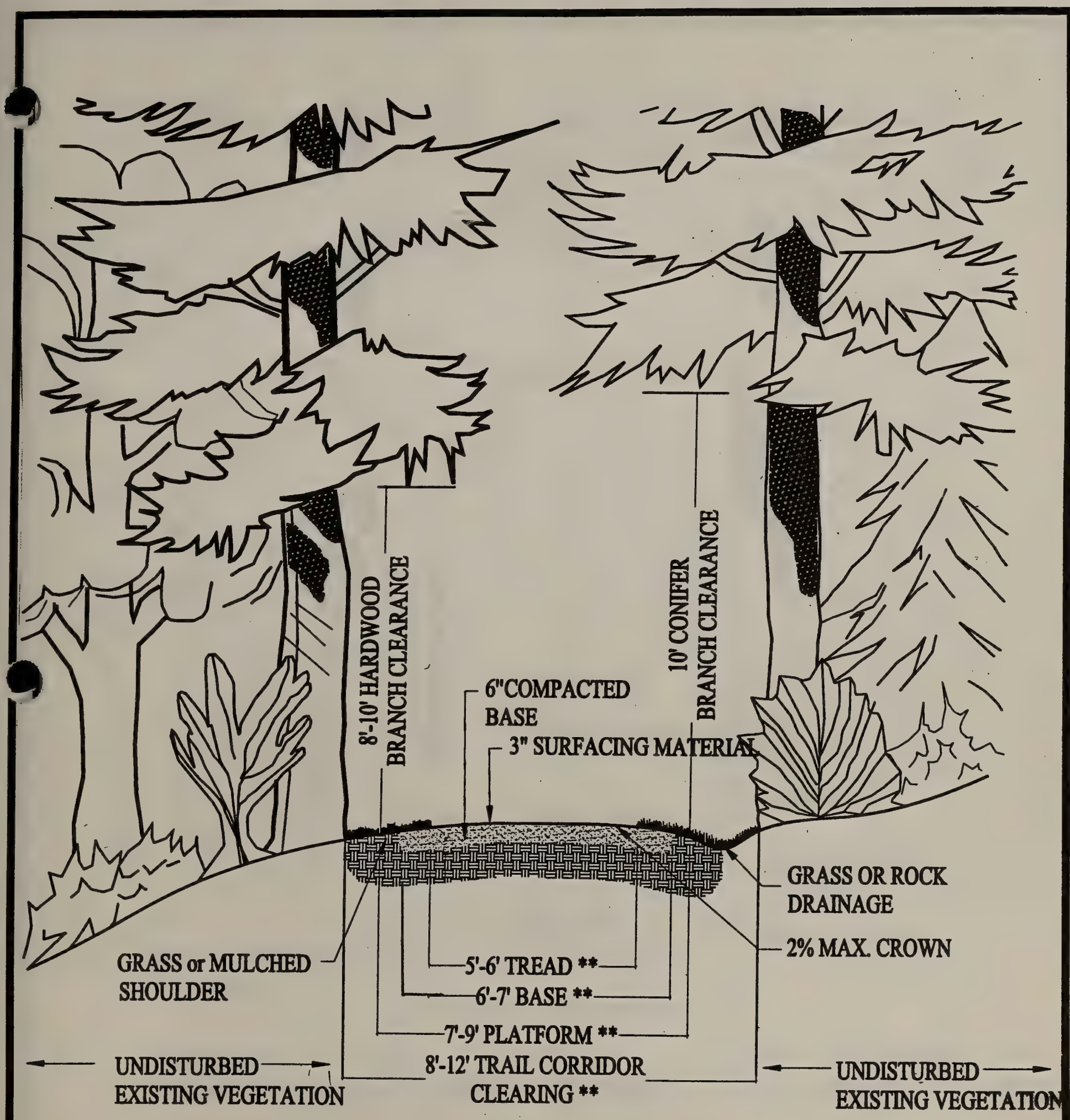
Massachusetts Department of Environmental Management
DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1/4" = 1'-0"
Date: January 24, 2000

Class 2 Trail Cross Section

Figure 1-9



** NARROWER CROSS-SECTION USED FOR WETLAND & RIVERFRONT AREAS.

GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 066-00

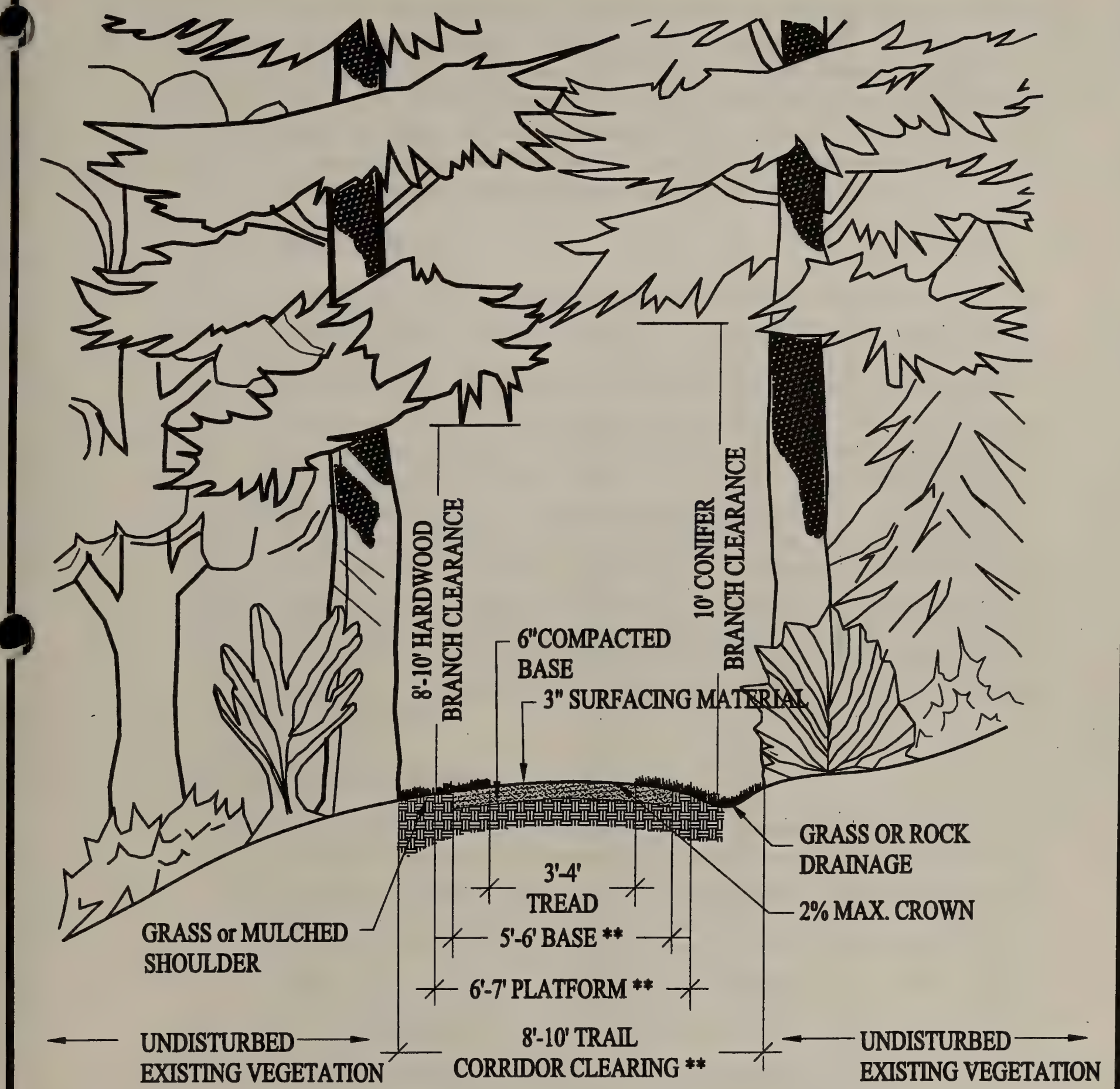
Copley-Wolff Joint Venture

Scale: 1/4" = 1'-0"

Date: January 24, 2000

Figure 1-10

Phase 1 - Class 3 Trail (Accessible) Cross Section



** NARROWER CROSS-SECTION USED FOR WETLAND & RIVERFRONT AREAS.

GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1/4" = 1'-0"

Date: January 24, 2000

Phase 2 - Class 3 Trail Cross Section

Figure 1-11

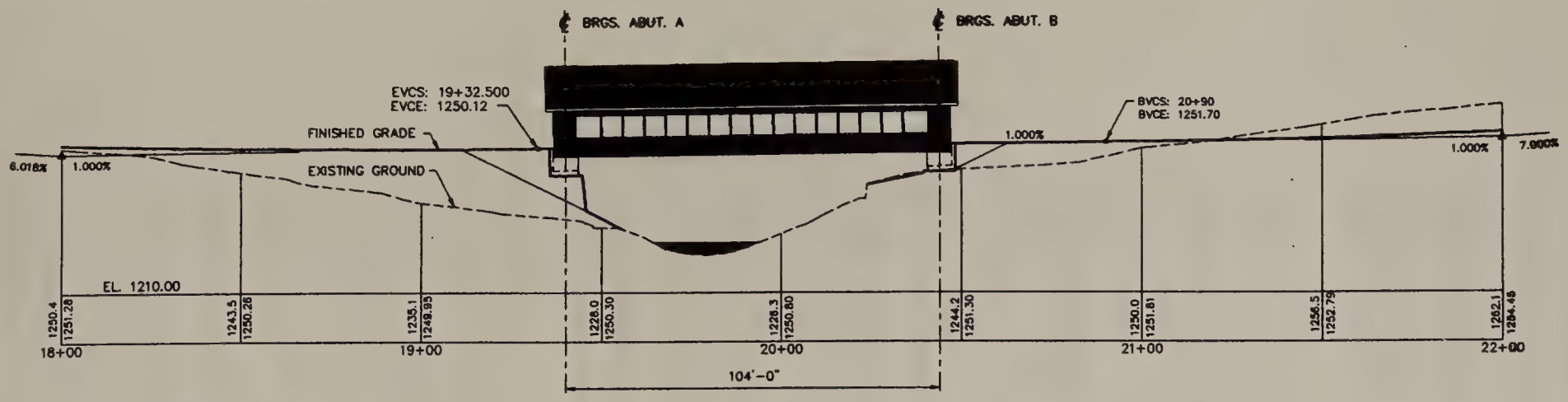
During winter months, the golf cart path system will also be utilized for general public recreational use for nordic skiing, supplemented by trails developed for winter use only to connect portions of the multi-use trail network to the golf cart path system in several locations. Approximately 10 kilometers of groomed nordic ski trails will be developed on the Greylock Center site. The snowmaking system for the groomed nordic trails is described in Appendix C. Further discussion of the trail system is provided in Section 2.3.

Connector Road

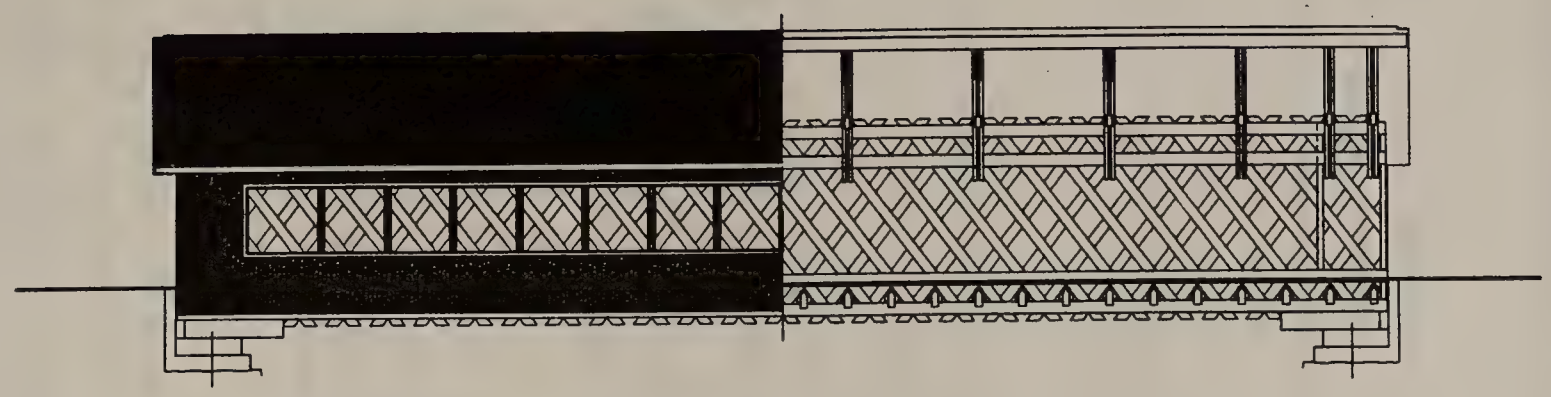
A connector road is proposed to link the southern and central portions of the Greylock Center site both to provide auxiliary access for safety purposes and to provide better internal site circulation without increasing traffic on local residential streets. It will also provide an internal, safe link for non-motorized vehicles which travel at lower speeds than regular traffic. The Town of Adams has submitted a Public Works Economic Development (PWED) application for development of the connector road. The connector roadway will be a total of 4500 feet in length, and involves crossing Peck's Brook. This crossing will be accomplished with a 104 foot, covered wooden bridge, as previously presented in the NPC and as shown in Figure 1-12. Environmental impacts associated with this roadway and stream crossing are addressed in this FEIR, and may be further detailed in a Notice of Intent application which will be filed separately from other Greylock Center facilities. The text portion of the application and minutes from the PWED public hearing held on January 5, 2000 are contained in Appendix D.

Wastewater Disposal

As presented in the NPC, the Greylock Center development will be served by the Adams municipal sewer system, although efforts will be made to incorporate innovative wastewater treatment into Greylock Lodge. Similar opportunities to utilize innovative systems will also be explored as Greylock Center build-out continues in order to consider the appropriateness of any technologies that may evolve in the interim. Although many commenters have suggested that Greylock Center should rely solely upon innovative wastewater treatment systems, municipal tie-in serves a larger purpose of assisting the efficiency of the municipal service, both in terms of rate structure and proper functioning of the present wastewater treatment facility, which is operating substantially below its design capacity. Existing sewer mains beneath Thiel and Gould Roads will be utilized for the clubhouse and golf maintenance facility, while a new sewer main will be constructed beneath West Mountain Road to serve Greylock Lodge and the Village. Both of these service lines will connect to an existing sewer main that runs beneath West Road.



PROFILE



PARTIAL ELEVATION

GREYLOCK CENTER SITE COVERED BRIDGE CONCEPT

Figure 1-12

Water Supply

Though previously presented in the NPC, the Secretary's Certificate requested confirmation that the Adam's Fire District has sufficient excess capacity under their existing Water Management Act (WMA) permit to supply both potable and irrigation/snowmaking water to the Greylock Center project. Peak water demand for both potable and irrigation/snowmaking water is estimated to be 368,000 gpd (0.368 mgd).

Potable water requirements for Greylock Center at full-build is estimated at 165,000 gpd. The basis for this estimate, originally presented in the DEIR, is reproduced in Appendix C of this FEIR. Irrigation demand during peak season is estimated at 203,000 gpd, as previously presented in the NPC, and reproduced in Appendix C. Snowmaking water demand has been calculated at 2.2 million gallons per year, however this water use occurs when there is no golf course irrigation. A description of the irrigation and snowmaking systems is also provided in Appendix C.

The Adams Fire District is currently registered to withdraw 2.0 million gallons per day (MGD) from municipal wells located in Cheshire, as of the last WMA permit renewal on 10/16/97. A water withdrawal registration is valid for a period of ten years; accordingly, the Adams Fire District is able to withdraw this quantity of water until at least 2007, at which time the registration will be subject to review. The average actual average daily water withdrawal over the past five years has been 1.44 mgd, as demonstrated by correspondence from DEP contained in Appendix C. Thus, the Adams Fire District has a permitted excess greater than 0.5 mgd.

Given the actual water usage rates as compared with the volume registered to the Adams Fire District, the project can be served by the municipal water supply without necessitating an amendment to the Adams Fire District's existing Water Management Act Permit. This has been confirmed by DEP through an interoffice email correspondence with DEM, provided in Appendix C. Given difficult subsurface conditions (depth to groundwater and/or bedrock, water storage tanks will be at grade, using elevation differences and landscaping to minimize visual impacts of the tanks. One tank will be located west of the Maintenance Facility and the second will be located upgradient of the Village. Exact locations will be determined pending further geotechnical investigation.

A separate public water supply source will be developed for the rustic camping area located in the southern portion of the site in order to avoid extending municipal water service to this remote location. A bedrock well was previously drilled in the vicinity, and will be developed to serve the campground.

1.2.1 Anticipated Permits for Build-out of Greylock Center Program Components

Table 1-1 provides a summary of permits anticipated for the construction of Greylock Center.

Table 1-1 Summary of Permits for the Construction of Greylock Center

Permit	Agency
Federal	
National Pollutant Discharge Elimination System (NPDES) Construction Permit	EPA
State	
Sewer Extension and Connection Permit	DEP
Disposal System Construction Permit for State or Federal Facilities (for rustic cabins)	DEP
Permit for Water Supply Pump Station	DEP
Public Water Supply permit (for rustic cabins)	DEP
Local	
Order of Resource Area Boundary Delineation Issued 4/13/99	Conservation Commission
Order of Conditions (Notice of Intent)	Conservation Commission
Special Permit (zoning)	Zoning Board of Appeals
Site Plan Approval	Planning Board
Subdivision Approval	Planning Board
Sewer Connection	Department of Public Works
Water Connection Permit	Adams Fire District
Building Permits	Building Department
Board of Health Permits	Board of Health
Alteration of Roadway Layout	Board of Selectmen
Street Opening Permit	Department of Public Works
Curb Cut Permit	Department of Public Works

1.3 Refinements to the Site Plan since the Notice of Project Change

The Greylock Center FEIR site plan (see Figure 1-1, enclosed in the map pocket following this section) has evolved from the extensive public review process focused on planning and design of the project, including numerous public meetings prior to commencement of MEPA review, and several iterations of the site plan that have been presented under the MEPA process preceding this FEIR. The site plan presented in the NPC advanced the Secretary's recommendation to pursue the "Modified Site Plan" introduced under the DEIR, and the most current site plan refines specific aspects of the plan presented in the NPC. These refinements are based upon public comment, which were in turn acknowledged by MEPA and incorporated into the Secretary's Certificate on the NPC.

Three notable modifications to the NPC site plan are reflected in the plan presented in this FEIR. These are:

- a further reduction (as compared with the DEIR site plan and the NPC site plan) of the overall footprint of the village component of the project;
- the relocation of three golf holes (#7, 8, and 9) and the rustic cabins, effected in order to avoid direct impacts to the adult stage habitat for Jefferson salamander, a Species of Special Concern, the recent discovery of which was disclosed in the NPC; and
- a further reduction of the trail system to minimize impacts on wetlands resource areas and state-listed species habitats.

These site plan modifications are discussed further in Section 2 of this document.

The majority of the site plan, construction phasing program and infrastructure build-out as presented in the DEIR and NPC remain unchanged. Phasing and infrastructure build-out are discussed further below in Section 1.5.

1.4 Project Phasing

Table 1-2 summarizes the proposed construction phasing for development of Greylock Center facilities, and Figure 1-12 illustrates the build-out of Phase I program components.

Table 1-2 Greylock Center Construction Phasing

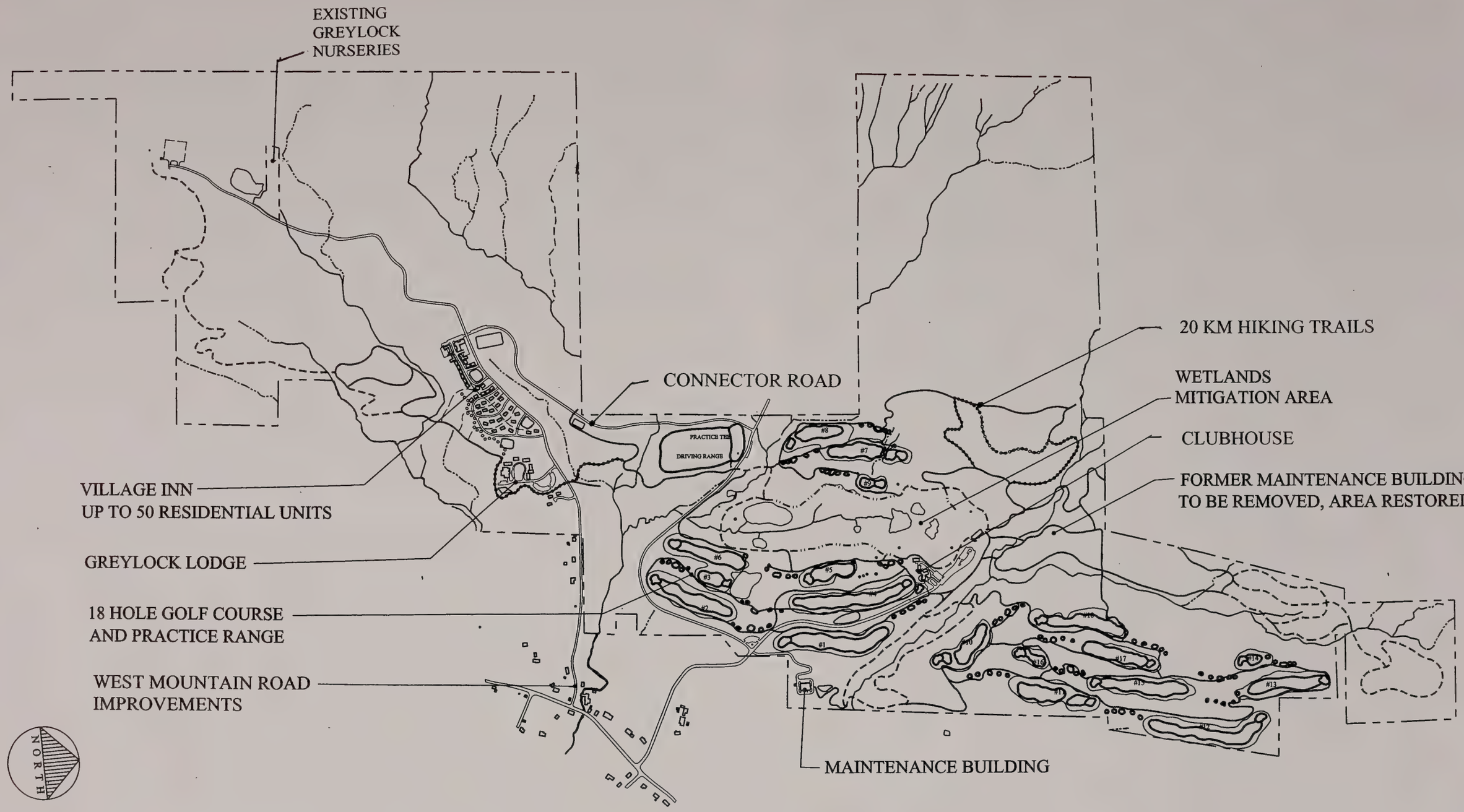
Program Component	PHASE I	Land Area Disturbed/ Infrastructure Required	PHASE II	Land Area Disturbed/ Infrastructure Required
Environmental Education Center ("Greylock Lodge")	30,000 square feet	4 acres/To be served by municipal water & sewer lines installed beneath West Mountain Road	N/A	-0-
Greylock Inn	40 Rooms	1 acre of temporary disturbance (0.5 acre permanent disturbance)	N/A	-0-
Hotel & Conference Center	N/A	-0-	160 Rooms	2 acres temporary construction 1 acre permanent footprint
Golf Course	18 Holes	145 acres construction disturbance (210 acres footprint converted to golf purposes)	N/A	-0-
Clubhouse and Sports Center (multi-use golf, Parks College, recreational and visitor center)	13,000 sf	6 acres, including parking	N/A	-0-
Trails	20 km hiking trails, 3 km groomed nordic ski trails	18 acres	18 km hiking trails 7 km groomed nordic ski trails	15 acres
Wetland Restoration/ Enhancement	18,400 sf wetland replication	31,250 sf	N/A	-0-

Program Component	PHASE I	Land Area Disturbed/ Infrastructure Required	PHASE II	Land Area Disturbed/ Infrastructure Required
Residential Units[1]	Up to 50 units	10 acres	Up to 250 units, mix of village & detached units	40 acres
Commercial/Public Space (located in lodge & clubhouse)	Up to 5,000 square feet	0.2 acre	Up to 20,000 square feet in village	0.5 acre
Connector Road	Final design to be completed under PWED program[2]	2 acres	N/A	-0-
Water & Sewer Infrastructure	Construction of mains to serve Greylock Lodge and Clubhouse/ Sports Center	5,000 lf beneath existing roads	Water & sewer construction within West Mountain Road beyond Greylock Lodge to accommodate full build-out	7,000 lf

Notes:

1 – Residences to be developed in Greylock Village.

2 – The PWED (Public Works Economic Development) program is administered by MassHighway, and provides funding to assist communities with construction of infrastructure improvements which will foster economic growth in the region.



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1" = 1000'-0"

Date: January 24, 2000

Greylock Center Phase 1 Build-Out

Figure

Figure 1-13

1.5 Fiscal Analysis of Phase I

DEM is confident that Phase I of Greylock Center will be economically self-sustaining because of the carefully designed blend of: (1) targeted, appropriate, public investment; (2) substantial private debt and equity investment; and (3) a construction phasing structure that will allow Phase I to be developed in accordance with market demand.

1.5.1 Public Support

The public investment in the Greylock Center project is limited to design and construction of infrastructure and recreational facilities for the project and derives from two sources: the Commonwealth of Massachusetts and the Town of Adams. The Commonwealth of Massachusetts support is mandated by Chapter 676 of the Acts of 1985 which directed the Department of Environmental Management (in coordination with the Division of Capital Asset Management) to acquire the Greylock Center site and set aside $8.5 million to invest in the site through a public/private partnership to promote economic development and recreation in Adams and Northern Berkshire County. This commitment on the part of the Commonwealth was one part of a coordinated effort created in the mid 1980's to bring economic prosperity to Northern Berkshire County, a region of the State which badly trailed then, and continues to badly lag behind the rest of the State in the economic quality of life of its citizens.

The other major element of the State's commitment to bring economic activity to Northern Berkshire County was the commitment to invest $40 million in creating Mass MOCA in the former Sprague industrial facility in North Adams. The coordinated strategy of these two State commitments was to invest in the two former industrial communities (Adams and North Adams) of North Berkshire County which were suffering the greatest economic decline because of the departure of manufacturing, and to help them convert to a tourism and service economy by capitalizing on their current natural advantages which is their presence in the premier cultural tourism destination in the Northeast.

This State investment strategy in Northern Berkshire County has started to bear fruit with the opening of Mass MOCA this past summer. Mass MOCA enjoyed spectacular popular success and attracted worldwide publicity for Northern Berkshire County ("Bilbao in the Berkshires" it was dubbed in the September 1999 issue of Travel and Leisure magazine). Not only has MassMOCA spurred a revitalization in North Adams through the opening of new restaurants and shops and a demand for lodging rooms in the area, but it has contributed to the overall quality of life in Northern Berkshire County, helping to support the development of the so-called "Silicon Village" of Williamstown and North Adams.

New high tech companies able to do business using computers and telephone lines (Tripod, eZiba, Streetmail.com, Angelfire.com) are springing up in Northern Berkshire County to replace the older manufacturing and industrial companies which have departed. These new high tech companies are capitalizing on the great natural advantages which exist in Northern Berkshire County: (i) an educated workforce being supplied by the numerous colleges and universities within 50 miles; (ii) cultural offerings, (iii) recreation; and (iv) great natural beauty, which has attracted people to Berkshire County for over 100 years.

The State investment in Greylock Center has been carefully targeted to those aspects of the project which the State is experienced at doing and which provide the greatest leverage to attract private investment dollars -the design and construction of a portion of the recreation and infrastructure which will be needed by the project. This up front capital investment by the State will be long term improvements which will benefit not just the project, but also the Town of Adams and northern Berkshire County.

The cost of these infrastructure improvements are appropriately scaled (30% of the total Phase I costs, 7% of total Phase I and II project costs) and enable the private sector to proceed with the development of Phase I in an orderly, market demand driven way, rather than forcing the private sector into speculative building driven by the need to quickly repay substantial up-front infrastructure investment. This will allow a regulated, demand-based development of Phase I, thus ensuring its financial success.

The Town of Adams is also supporting the project, thus ensuring the financial success of Phase I, through the construction of a connector road using PWED funds and the granting of $750,000 of value in Tax Increment Financing to support infrastructure development to the Golf Course. These Town public investments are again carefully targeted to long term infrastructure, will attract the private investment to the project and allow for the project to develop in accordance with market demand, thus ensuring its economic success.

1.5.2 Private Investment.

Over 60% of total Phase I costs will be provided by private debt and equity sources. The initial capital development costs and long term operating projections for each component of Phase I have been evaluated by a number of funding sources who are satisfied that the components will be self-supporting based on market demand, positioning and competition. Further, no component, including the residences, will be developed until there is market demand because without meeting financing sources' requirements, there will not be funding for the projects.

The four main components of Phase I, the Greylock Lodge, the Golf Course, up to 50 Residences and a 40-room Inn, will be financed individually as follows:

- Greylock Lodge will be financed by its owner, Nature's Classroom, Inc., a not for profit environmental education organization, utilizing a combination of tax exempt debt and its own capital. Natures Classroom has successfully operated facilities such as Greylock Lodge for over 25 years, by providing residential environmental education programs during the school year to over 400 middle schools in New England and New York, and by using its facilities in the summer for group meeting business, primarily by other non-profit organizations. DEM believes this demonstrated 25 year track record of success provides more than ample basis for strong confidence in the economic success of Greylock Lodge.

- Greylock Golf Course will be financed with a combination of state funds and private debt and equity. There are numerous market studies which have identified a severe shortage of destination quality courses in Berkshire County to meet the demand from residents and tourists to Berkshire County. The most competitive golf course to Greylock, Taconic Golf Club in Williamstown, suffers from an extreme shortage of tee times due to heavy demand, even with greens fees of $125 per round for the past year, which is more than double the projected greens fees for the Greylock Golf Course. The projected 25,000 rounds of golf for the Greylock Golf Course will be more than sufficient to assure the long term economic success of the golf course. In addition, the co-owner and operator of the Greylock Golf Course, Corcoran Jennison Hospitality, Inc., is an owner and operator of other golf courses in Massachusetts and has a sustained record of profitably operating golf courses in the state. These factors give DEM a high level of confidence in the likelihood of the financial success of the Greylock Golf Course.

- The 50 Greylock Residences in Phase I will only be built when an individual buyer has been identified and arranged private financing for the construction of the residence (as well as satisfying Master Plan tests). Accordingly any builder of a residence will have to have passed private lending underwriting review, assuring that they are financially qualified to build and maintain the property. Therefore, DEM has a high level of confidence that any residences built as part of Phase I will be economically self-sustaining.

- The Greylock Inn will be financed by a combination of private debt and equity and will not be constructed until the Inn can meet the underwriting requirements of the private financial markets. DEM has strong reason to believe that the Greylock Inn will be financially viable and will meet such underwriting requirements because of the shortage of hospitality and lodging facilities in north Berkshire County and the increasing demand for such facilities, particularly after the extremely successful opening at MassMOCA in North Adams. This shortage of lodging has also been exacerbated by MassMOCA's success, as evidenced by the 95% occupancy at the closest competitive facility to Greylock, the Holiday Inn in North Adams.

DEM staff and DEM's outside financial consultant, Byrne-McKinney have reviewed the operating projections for the initial components of Phase I and believe them to be reasonable, thus providing the basis for concluding that Phase I will be economically self-sustaining.


Greylock Center Project
FEIR Site Plan
Department of Environmental Management
Greylock Management Associates
Scale: 1" = 400'
Date: January 24, 2000
Copley-Wolff Joint Venture
Hurdzan Fry Golf Course Design / Armstrong Associates, Inc.
Nordic Group International
Fay, Spofford and Thorndike, Inc. / Clough Harbour and Associates
Wetlands & Wildlife, Inc. / Oxbow Associates
White Engineering, Inc. / Sno.Matic Controls and Engineering, Inc.
Survey by East Coast Mapping, 9/97
Wetlands Mapping by EarthTech/Almer Huntley, 2/99
Perennial Stream Locations by Wetlands and Wildlife, 2/99
Geotech Information by Haley and Aldrich, 2/99
1"=400'-0"
800 400 200 100 0 400 800
Legend
Perennial Streams
Riverfront Area
Intermittent Streams
Wetlands
Wetland Buffer
Area of Delineation
Certified Vernal Pool
Existing Pond
Proposed Stormwater Pond
Rock Outcroppings
#1 Phase 1 Wetland/ Stream Crossing
#36 Phase 2 Wetland/ Stream Crossing
Trail Head
Existing Tree Line
Proposed Tree Line
Golf Green
Golf Fairway
Golf Rough / Selective Clearing Limit
Golf Tee
Golf Cart Path/ Winter Trails
Golf Cart Path / Trail Combined
Existing Trail to Remain
Phase 1 Trails
Class I
Class II
Class III
Winter Use Only
Phase 2 Trails
Class I
Class II
Class III
Winter Use Only
Trails w/ Snowmaking
A A A A
B B B B
O O O O
Phase I
Phase II
Phase III
CHESHIRE HARBOR TRAIL HEAD
CLIVUS MULTRUM
TO CLASSIC BROOK TRAIL
SPECIAL EVENTS AREA
TUBING/ SLIDING HILL
COMFORT STATION
EXISTING MAPLE SUGAR BUSH
LARGE MAPLES AND OTHER HARDWOODS
GREYLOCK NURSERIES
GOULD TRAIL
EXISTING SNOWMOBILE TRAIL
GOULD FARM
VILLAGE
INN
VILLAGE GREEN
GREYLOCK INSTITUTE
HOTEL / CONFERENCE CENTER
OUTDOOR LEARNING CENTER
HOUSING
EMERGENCY ACCESS
A.D.A. ACCESSIBLE NATURE TRAIL
EXISTING SNOWMOBILE ACCESS
WILDFLOWER MEADOW
WOODEN COVERED BRIDGE
EXISTING PARKING
CONNECTOR ROAD
WEST MOUNTAIN ROAD
PRACTICE TEE
DRIVING RANGE
GREYLOCK LODGE
EXISTING SNOWMOBILE ACCESS TO GOULD FARM
EXISTING PAVILION
PROPOSED WATER PUMP HOUSE
INFORMATION KIOSK
GAS EASEMENT
MAINTENANCE FACILITY
JAESCHKE ORCHARD
GOULD ROAD
WEST ROAD
THE GLEN
THIEF ROAD
HOOSIC BROOK
CLUBHOUSE
EXISTING GRASS SLOPES
EXISTING WILLOW GROVE
EXISTING BEECH / MAPLE FOREST
EXISTING BIRCH GROVE
THUNDERBOLT TRAIL
WETLAND COMPENSATION AREA
SITE RESTORATION
TUBING / SLIDING HILL
MOUNT GREYLOCK STATE RESERVATION
HATHAWAY PROPERTY
SPECIALTY MINERALS
TO BELLOWS PIPE

CHESHIRE HARBOR TRAIL HEAD

CLIVUS MULTRUM

TO BASSETT BROOK TRAIL

SPECIAL EVENTS AREA

TUBING/ SLIDING HILL

COMFORT STATION

CAMPING AREA

EXISTING SNOWMOBILE TRAIL

EXISTING MAPLE SUGAR BUSH

LARGE MAPLES AND OTHER HARDWOODS

#39

GREYLOCK NURSERIES

GOULD TRAIL

#43

#41

#46

#27

#36

#28

#29

#23

#22a

#22

#30

WEST MOUNTAIN ROAD

CONNECTOR ROAD

EXISTING SNOWMOBILE TRAIL

GOULD FARM

VILLAGE

INN
VILLAGE GREEN
GREYLOCK INSTITUTE
HOTEL / CONFERENCE CENTER
OUTDOOR LEARNING CENTER
HOUSING

EMERGENCY ACCESS

A.D.A. ACCESSIBLE NATURE TRAIL

EXISTING SNOWMOBILE ACCESS

WILDFLOWER MEADOW

WOODEN COVERED BRIDGE

EXISTING PARKING

PRACTICE TEE

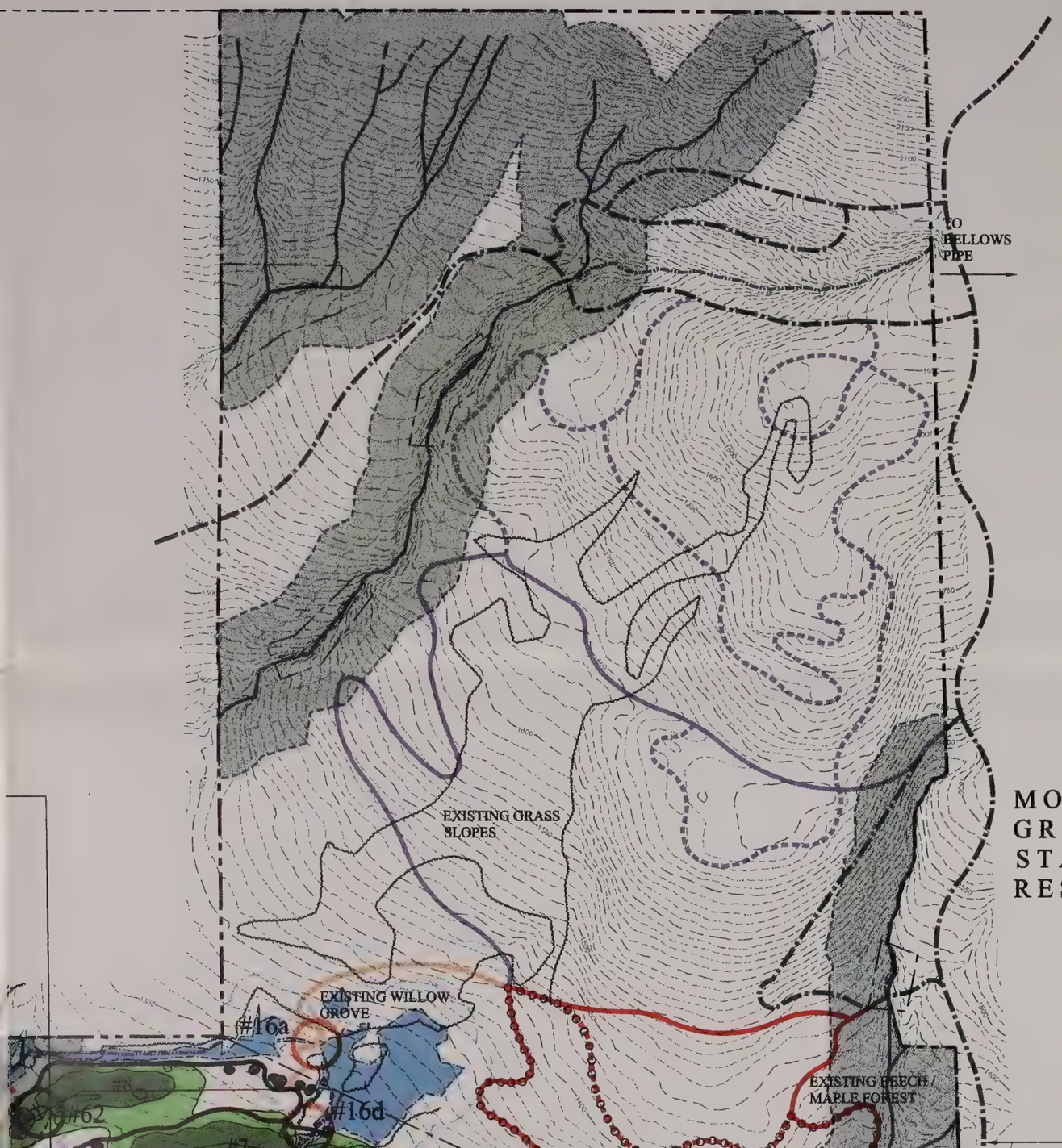
#16

Greylock Center Project

FEIR Site Plan

Department of Environmental Management
Greylock Management Associates

Scale: 1" = 400'
Date: January 24, 2000



Copley-Wolff Joint Venture

Hurdzan Fry Golf Course Design / Armstrong Associates, Inc.
Nordic Group International
Fay, Spofford and Thorndike, Inc. / Clough Harbour and Associates
Wetlands & Wildlife, Inc. / Oxbow Associates
White Engineering, Inc. / Sno.Matic Controls and Engineering, Inc.

Survey by East Coast Mapping, 9/97
Wetlands Mapping by EarthTech/Almer Huntley, 2/99
Perennial Stream Locations by Wetlands and Wildlife, 2/99
Geotech Information by Haley and Aldrich, 2/99

1"=400'-0"

800 400 200 100 0 400 800

Legend

- Perennial Streams
- Riverfront Area
- Intermittent Streams
- Wetlands
- Wetland Buffer
- Area of Delineation
- Certified Vernal Pool
- Existing Pond
- Proposed Stormwater Pond
- Golf Green
- Golf Fairway
- Golf Rough / Selective Clearing Limit
- Golf Tee
- Golf Cart Path/ Winter Trails
- Golf Cart Path / Trail Combined
- Existing Trail to Remain

Phase 1 Trails

- Class I
- Class II
- Class III
- Winter Use Only

Phase 2 Trails

- Class I


#22
#63
#19
#15
#16
#14
#13
#12
#10
#6
#3
#2
CONNECTOR ROAD
PRACTICE TEE
DRIVING RANGE
GREYLOCK LODGE
EXISTING SNOWMOBILE ACCESS TO GOULD FARM
EXISTING PAVILION
PROPOSED WATER PUMP HOUSE
INFORMATION KIOSK
GAS EASEMENT
JAESCHKE ORCHARD
GOULD ROAD
WEST ROAD
WEST MOUNTAIN ROAD
CASS BROOK

EXISTING WILLOW GROVE

#16a

#16d

#16b

#16c

#55

#59

#62

#8

#7

#9

#5

EXISTING BEECH / MAPLE FOREST

#57

THUNDERBOLT TRAIL

WETLAND COMPENSATION AREA

SITE RESTORATION

TUBING / SLIDING HILL

#1

#2

#49

#50

#60

#34

#5b

#5c

#5a

EXISTING BIRCH GROVE

CLUBHOUSE

#3

#4

THIEF ROAD

HOXIE BROOK

#18

#10

#16

#17

#14

#15

#11

#13

#12

#56

MAINTENANCE FACILITY

HATHAWAY PROPERTY

SPECIALTY MINERALS

Certified Vernal Pool

Existing Pond

Proposed Stormwater Pond

Rock Outcroppings

#1 Phase 1 Wetland/ Stream Crossing

#36 Phase 2 Wetland/ Stream Crossing

Trail Head

Existing Tree Line

Proposed Tree Line

Phase 1 Trails

- Class I
- Class II
- Class III
- Winter Use Only

Phase 2 Trails

- Class I
- Class II
- Class III
- Winter Use Only

Trails w/ Snowmaking

- A A A A — Phase I
- B B B B — Phase II
- 0 0 0 0 — Phase III

- The Greylock Inn will be financed by a combination of private debt and equity and will not be constructed until the Inn can meet the

NT
YLOCK
TE
ERVATION

THUNDERBOLT TRAIL

WETLAND COMPENSATION AREA

SITE RESTORATION

TUBING / SLIDING HILL

Perennial Streams

Riverfront Area

Intermittent Streams

Wetlands

Wetland Buffer

Area of Delineation

Certified Vernal Pool

Existing Pond

Proposed Stormwater Pond

Rock Outcroppings

#1 Phase 1 Wetland/ Stream Crossing

#36 Phase 2 Wetland/ Stream Crossing

Trail Head

Existing Tree Line

Proposed Tree Line

Golf Green
Golf Fairway
Golf Rough / Selective Clearing Limit
Golf Tee

Golf Cart Path/ Winter Trails

Golf Cart Path / Trail Combined

Existing Trail to Remain

Phase 1 Trails

Class I
Class II
Class III
Winter Use Only

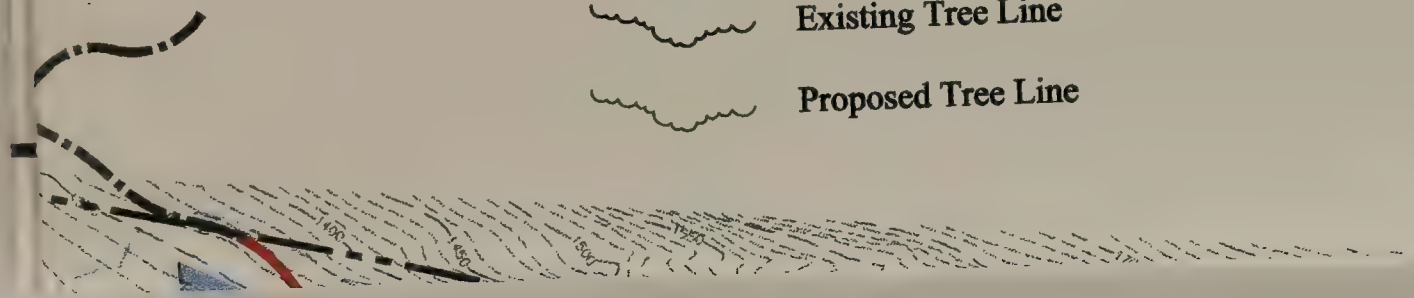
Phase 2 Trails

Class I
Class II
Class III
Winter Use Only

Trails w/ Snowmaking

A A A A
B B B B
0 0 0 0

Phase I
Phase II
Phase III



Ep01

2.0 SITE PLANNING MODIFICATIONS AND CONSISTENCY OF SITE PLAN WITH GREYLOCK CENTER MASTER PLAN

2.1 Revisions to Golf Course Routing Plan

Since the filing of the Notice of Project Change (NPC), golf holes #7, 8, and 9 have been modified. These three fairways are located on the west side of the large wetland complex in the central glen portion of the Greylock Center property. Revisions to these holes were warranted due to the discovery of Jefferson salamander breeding in vernal pools in the central portion of the site, as was disclosed in the NPC. The NPC identified that Hole #9 in particular would impact Jefferson salamander habitat (adult stage), and in order to relocate Hole #9, revisions to Hole #7 and Hole #8 were also necessary. Figures illustrating the modifications made to these three hole locations are provided in Section 4.

DEM met with NHESP representatives on January 3, 2000 to review revisions to the routing plan as presented in the NPC in response to an earlier consultation with NHESP regarding the discovery of Jefferson salamander on the site in 1999. NHESP concurred that the site plan revisions appropriately avoid impacts to adult stage habitat for Jefferson salamander proximate to the vernal pool in which the salamander has been found to breed. Further discussion of the Jefferson salamander habitat survey is presented in Section 5.2 of this FEIR.

2.1.1 Additional Benefits Associated with Revisions to Routing Plan

The revised location of Holes #7, 8, and 9 provides several benefits in addition to the primary goal of avoiding impacts to recently identified adult stage habitat for Jefferson salamander. These additional benefits include improved public access between the central glen area of the Greylock Center site and linkages with the Thunderbolt Trail and to Mount Greylock State Reservation as a whole, and a wider corridor for wildlife movements in general, uninterrupted by golf activities. Finally, Holes #7, 8, and 9 are clustered in a tighter area, thus reducing the overall footprint of the 18-hole golf course, as is reflected in Figures 4-2 and 4-3.

2.1.2 Impacts Associated with Revisions to Routing Plan

While there are a number of benefits associated with the revised routing of Holes #7, 8, and 9, these modifications also require certain compromises. One of these compromises is a somewhat greater disturbance of Riverfront Area adjacent to a tributary to Peck's Brook. Under the routing plan presented in the NPC, two tees were located within this Riverfront Area near an existing stream crossing (identified on plans in this FEIR as crossing #16). The revised Hole #8

proposes a green and portions of fairway and rough within this Riverfront Area, as well as two tees associated with Hole #7 near crossing #15. The affected portion of this Riverfront Area drains to the northeast, away from this northern branch of Peck's Brook. Although portions of Hole #8 and two tees for Hole #7 are located in the Riverfront Area, surface runoff from these areas of managed turf drains away from Peck's Brook. In addition, Hole #9 is largely located within the 100' buffer zone associated with the wetland complex in the central portion of the site. The relationship between the relocated holes with respect to Riverfront Area and the 100 foot buffer zone are discussed in Sections 3 and 4.

While encroaching upon Riverfront Area and buffer zone, the revised locations of Holes #7 and 8 also present minimally acceptable safety distances between play of these holes given the angle at which shots will be played. However, this compromise is necessary to maintain the flow of play(e.g., starting and ending points, differing par distances from one hole to the next), while more importantly avoiding impact to rare species habitat.

2.2 Layout of Residential Units

As directed by the Secretary's Certificate on the NPC, GMA has further reduced the overall footprint of residential development associated with Greylock Center. To begin with, the single family residences proposed along the eastern end of West Mountain Road have been eliminated, with the balance of units represented by the detached homes being incorporated into the Village. Though initially intended to have been an extension of the existing pattern of residential house lots along the roadway, several commenters objected to the continuation of the existing conventional residential development signature.

Within the Village itself, the residential footprint has been modestly reduced, as the NPC had already substantially clustered residential development into the Village as compared with the DEIR, and in order to accommodate those units previously proposed along West Mountain Road. Minor reductions in the footprint are achieved toward the southern end of West Mountain Road, as any further clustering is problematic given the necessity of providing adequate area for parking and stormwater management features, and given the proximity of wetland resource areas (Riverfront Area in particular) in the vicinity of the village. Reviewers are encouraged to compare the relationship of proposed buildings within the Village complex with those existing structures which appear on the site plan along West Mountain Road and West Road. This point of reference provides useful context for interpreting the site plan, and recognizing the degree of clustering that has already been achieved within the Village. As previously noted, the village site plan included herein indicates preliminary design concepts, which will be subject to further refinement through the local permitting process.

2.2.1 Limits of tree clearing/ lawns

Phase 1 of the Greylock Center build-out includes development of 50 residential units with full residential build-out in Phase II. All residential development, however, will be undertaken based upon market demand. As such, clearing of trees will only occur immediately prior to scheduled construction, on a lot by lot basis, and will not involve wholesale clearing of the entire village footprint. Since the center of the proposed Village is located in a meadow, only 19 acres of wooded land will be cleared in association with development of the Village under full build-out. Lower density housing has been located in the wooded portions of the Village footprint to facilitate efforts to save individual trees and/or clusters of trees to maintain as much of the native vegetation as possible. Further, the Greylock Center master landscape/ revegetation plan will reintroduce trees among areas of residential development in a manner which is consistent with the site and building design goals (e.g., if solar energy is proposed for certain buildings, large shade trees will not be reintroduced into areas that may shade solar panels).

The village footprint proposes total disturbance of approximately 51 acres or 5% of the site (temporary disturbance as well as permanent), which includes all residential units except for three residential structures associated with Greylock Lodge. This translates to less than 1/5 acre per unit on average. As compared with conventional residential development of 1/2 to 1-acre lots, the clustered village pattern of residences will disturb less than 30% of the land area that conventional residential 'sprawl' would consume.

The concept of the village does not encourage the establishment of individual lawns, although common lawn areas will be provided by the village 'green' to the west of the hotel/conference center, and by the 'Great Meadow' to the north of the village green among other such areas. The meadow area will be maintained as tall grasses and wildflowers, mowed only once in late summer/early autumn. Areas between individual residential buildings are envisioned to be vegetated with a variety of native herbaceous and woody vegetation traversed by footpaths.

2.3 Trail System

2.3.1 Overview of Trail Network

The Greylock Center trail system includes numerous multi-use trails which are intended to facilitate pedestrian and bicycle access to appropriate areas of the site, as well as provide a variety of recreational opportunities, such as nordic skiing, jogging, and bicycling. Trails will be open to the general public at no cost, although fees will be charged for use of groomed ski trail loops and rental

equipment such as skis and mountain bikes (use of personal equipment will not be prohibited). Three 'classes' of trails are proposed (previously introduced in Section 1.2.5), in addition to which there will be a golf cart path system restricted to golfers during the golf season and incorporated into the nordic ski trail network for winter use, and several trail segments that will only be utilized in the winter. The trail network also provides multiple points of connection to existing trails that ultimately lead to Mount Greylock State Reservation (e.g., Bassett Brook, Thunderbolt, Gould and Cheshire Harbor Trails). Finally, it should be noted that several sections of existing trails which traverse particularly sensitive areas will be abandoned and allowed to revegetate naturally.

The trail system will be constructed in two phases. The length of each type of trails to be constructed in Phase I and Phase II is summarized below in Table 2-1.

Table 2-1 Length of Trails to be Constructed by Phase

Trail Type	Length to be Constructed in Phase I	Length to be Constructed in Phase II
Cart Path	7,056 lf 2.15 km	-0-
Golf/ Hiking Combined	4,332 lf 1.32 km	1,760 lf 0.54 km
Winter Use Only	4,488lf 1.37 km	-0-
Class I - 9 ft tread (16' wide corridor)	15,378 lf / 4.69 km (new) 7,715 lf / 2.35 km (existing trails to be improved)	17,546 lf 5.35 km
Class II - 8 ft tread (14' wide corridor)	14,253 lf/ 4.35 km (new) 5394 lf / 1.64 km (existing trails to be improved)	27,747 lf / 8.46 km (new) 928 lf / 0.28 km (existing trails to be improved)
Class III - 4 ft tread (8' wide corridor)	3,365 lf/ 1.03 km (new) -0- (existing trails to be improved)	836 lf / 0.25 (new) 565 lf/ 0.17 km (existing trails to be improved)
Total by Phase	84,608 lf 25.80 km	58,565 lf 17.86 km
Existing Trails to be Abandoned	38,643 lf 11.78 km	-0-

Of the total 143,173 lf (43.65 km) multi-use trail system, 31,638 lf (9.64 km) will be constructed to accommodate snow-making and grooming equipment. Appendix C describes the proposed snow-making equipment and quantifies water demand associated with snow-making.

In addition to this multi-use trail network, the Village will be designed to encourage pedestrian movement through an internal footpath system, as well as provide links to the multi-use trail network. A description and cross-section of each class of trail was previously presented in Section 1.2.5.

2.3.2 Public Access to Trails in Vicinity of Golf Course

The Secretary's Certificate on the NPC specifically raised commenters' concerns about access to the trail network in the vicinity of the golf course. DEM and GMA have committed to allowing continued, unrestricted access to the existing trail network that traverses the central glen area, which is a popular passive recreational area among local residents.

Trailheads/parking for access to the extensive Greylock Center trail network will be located in largely the same location of current primary access points, coinciding with access to the central glen area near the present (and future) driving range, and the Thunderbolt trailhead at the end of Thiel Road. Parking which is presently available at the intersection of Gould and Thiel Roads will still be provided, however this parking is primarily intended to allow brief stops at an information kiosk, which will direct visitors to parking areas with direct access to the public trail network. Similarly, existing trailheads for the Gould and Cheshire Harbor trails, which are substantially removed from any golf activities, will also remain in their present locations.

The alignment of the multi-use trail network has been designed to provide safe distances from golf activities. Trails to either side of the driving range will additionally be 'protected' by natural changes in grade and introduced plantings. Trails within the central glen area have been aligned with cognizance of the angles and distances of golf shots which would be played on those holes adjacent to the glen. Respecting safety issues that are inherent to golf activities, pedestrian use of golf cart paths by non-golfers will be prohibited during the golf season (May - October), except along those segments which involve a shared wetland crossing and which are located an adequate distance away from active golf play.

Notably, the modified locations of golf holes #7, 8, and 9 substantially increase the corridor of largely undeveloped land that links the glen to Mount Greylock

State Reservation via the Thunderbolt Trail. This corridor is several thousand feet in width, and provides upland, wetland and riparian habitat for wildlife, while also allowing for public access along several different trails.

2.4 Future Protection for Undeveloped Portions of Greylock Center Property

In order to reaffirm its commitment toward the perpetual protection of natural resources on the Greylock Center property, DEM will place a Conservation Restriction (CR) over approximately 790 acres of the site. Although, under ordinary circumstances, DEM ownership itself is equivalent to guaranteed protection of open space, the terms of Chapter 676 not only enable, but require DEM to engage in site development activities. The Greylock Center program has been purposefully crafted to balance the mandates of Chapter 676 while protecting the most valuable assets of the 1,063 acre site.

As a further measure to protect these resources, DEM proposes to grant a CR to the Town of Adams Conservation Commission across those portions of the property that are not proposed for Village or Golf Course development. The purpose of this CR will be to affirm that there will be no future, incremental development across the site beyond that disclosed in the Greylock Center MEPA documentation and to establish a legal mechanism to ensure protection and enhancement of specific resources and natural communities. Resource management activities allowed under the terms of the proposed CR will be derived from the Greylock Center Stewardship Plan (Appendix A), which will be implemented by the Greylock Trust and funded by assessing a percentage of the gross annual income , sales price, or real estate value associated with businesses conducted on the site. This CR will serve to ensure that undeveloped portions of the Greylock Center property will be both protected and managed in accordance with the goals of the Master Plan, and provide the public with a measure of assurance that developed portions of the the site plan will not be subject to further expansion.

2.5 Site Plan and Programming Consistency with Master Plan

The Greylock Center Master Plan was developed by DEM as the "master planner" of the project. The planning process was carried out with the assistance of a citizen's advisory committee from 1991 to 1996. The plan provides general performance thresholds and development parameters for the Request for Development Proposals (RFDP), the purpose of which was for the solicitation of private proposals for use of the site. The Master Plan was not intended to develop or propose a preferred schematic design for the project.

This Master Plan builds upon the mandates of Chapter 676 of the Acts of 1985, and provides guidelines for the realization of the Greylock Center project. At the core of the Master Plan are four distinct but complementary goals:

- Public Recreation
- Regional Economic Development
- Education
- Protection and Appreciation of Mount Greylock State Reservation Resources

These four goals are designed to form the foundation for the development.

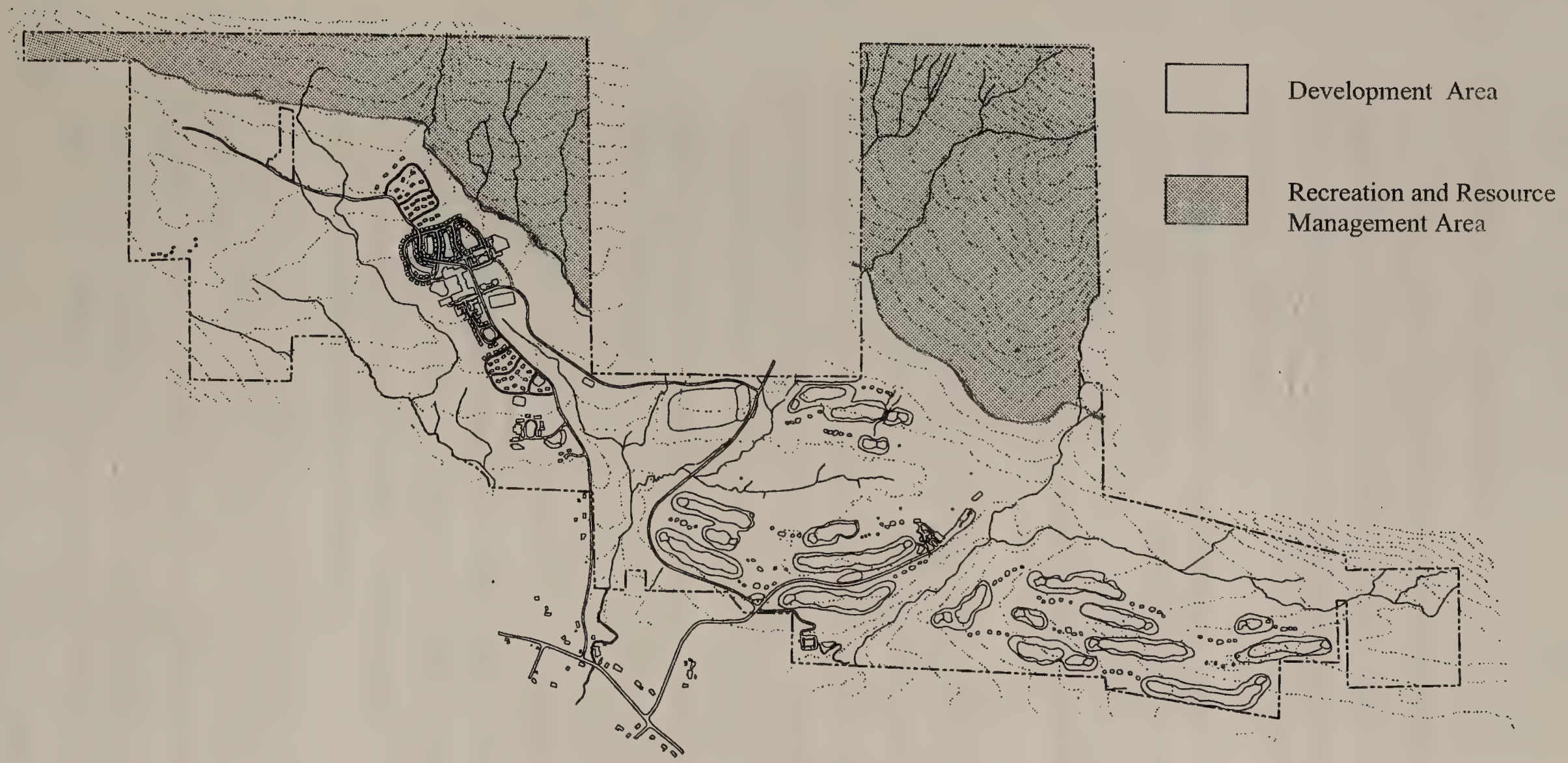
Land Use Categories:

The Master Plan established two distinct and simple land-use categories (see Table 2-2 below and Figure 2-1) and physical parameters for development on the site. These land-use categories were based on the natural resource inventory completed by the Center for Ecological Technology and the land use planning advice of Sasaki Associates, Inc.

The current plan complies with these land use area designations, however it should be noted that these guidelines do not supercede relevant Federal, State or local rules, laws or regulations.

Table 2-2 Abbreviated Land Use Guidelines Established by the Greylock Center Master Plan

Area Designation	Land Use Category	Permitted Uses
Area I	Recreation and Resource Management Area	Hiking, cross-country skiing, picnicking, horseback riding, camping, rustic lodging small scale facilities and structures that support extensive recreation and sustainable development
Area II	Development Area	Intensive development uses such as village, Greylock Lodge, golf course; any substantial structures; support facilities, such as parking and maintenance buildings



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1" = 1200'-0"
Date: January 24, 2000

Land Use Designations from Greylock Center Master Plan

Figure 2-1

Development Programming Guidelines:

The development program requirements for the Greylock Center site reflect the Commonwealth's goals and illustrate how the mission as well as the goals and objectives of the project can be fulfilled on the site. Project phasing is not only permitted but encouraged as long as total program requirements are met and Phase I contains the critical mass of activities needed to ensure viable year round activities and operation.

The Greylock Center Master Plan allows for certain development program components under specific conditions. Residential units, for example, are allowed provided that: the construction and operation of the units follow the site and building guidelines articulated in the Master Plan; the residential units relate to other project components and programming; and provide financial benefits to the project, the Town of Adams and the region.

Other program elements are acceptable as long as they are not specifically prohibited and are consistent with the overall mission and approach presented by the Greylock Center Master Plan. Table 2-3 identifies various development program categories addressed under the Greylock Center Master Plan, and provides examples of program components that are required and those elements that are optional under the terms of the Master Plan. The current proposed site plan provides for the development of required uses at full build out with the majority of the recreation and education facilities developed in the first phase.

The site plan also includes optional uses, which were either 'recommended' or 'suggested'. Although many of the program components that have been incorporated into the site plan presented in this FEIR are "optional", these have been included in order to provide an array of activities to promote operation of Greylock Center facilities in several seasons, and thereby bolster the local and regional economy on a year-round basis. Proposed uses include a golf course eligible for professional tournaments, cross country skiing, trails of various levels of difficulty and built as part of a multi-use trail system; program and support space for the Berkshire Institute at Greylock and other education providers, tennis court, an environmental education center (referred to as 'Greylock Lodge' in the NPC and FEIR), rustic cabins and camp sites.

The 300 residential units proposed are allowed provided that they follow the site and building design guidelines articulated in the Master Plan, relate to other project components and programs, and support the programming and curriculum offerings of Greylock Center, and that the units provide financial benefits to the development, the Town of Adams, and the region. The residential units shown on the site plan are designed to illustrate the overall footprint of a 'village' and the associated environmental impact. The actual

Village layout may differ from the FEIR site plan, however the final overall Village footprint and associated environmental impact will not expand beyond the Village footprint illustrated in the FEIR Site Plan (Figure 1-1). Development of the housing can only proceed with a finding by the Commissioner of Environmental Management that the units demonstrate compliance with master plan guidelines. The Commissioner's Finding will be built into the Master Lease documents for the project.

Table 2-3 Development Programming Guidelines

Program Components	Program Element Requirements	Optional Elements
Lodging, Residential & Hospitality	♦ Conference Center (Maximum of 200 Units) ♦ Indoor Recreation & Fitness Facility	♦ Residential Units Attached & Detached ♦ Commercial Space ♦ Indoor Wellness Center ♦ Rustic Cabins
Summer Recreation	♦ Golf Course ♦ Trail System ♦ Recreation Areas ♦ Outdoor Swimming	♦ Tennis Courts ♦ Play Field ♦ Fitness Trail ♦ Campsites
Winter Recreation	♦ Cross Country Skiing ♦ Sledding & Tobogganing ♦ Lighted Skating Area	♦ Telemark & Norpine Skiing ♦ Snowmaking on 15 Km of Trails ♦ Snowmobile Connector Trail
Education & Nature Recreation	♦ Program Staff ♦ Year Round Programs ♦ Interpretive Nature Trail ♦ Special Events Area	♦ Institute/Thematic Learning Center ♦ Conference & Meeting Space ♦ Welcome & Interpretive Area ♦ Training Facility ♦ Research Demonstration Area ♦ Environmental Education Center ♦ Group Camping

Prohibited uses and facilities include:

- Alpine skiing on the site;
- Construction of aerial tramway, chair lifts, or associated downhill ski facilities extending onto the Mt. Greylock State Reservation;
- Large scale retail or commercial development; and
- A motorized recreational vehicle trail system.

None of these elements is proposed for the Greylock Center site.

Site and Building Design Guidelines

In order to ensure the highest quality of design at Greylock Center, the Department of Environmental Management established a Site & Building Design Committee (SBDC) to review and evaluate proposed plans and design specifications. This group of professionals also serves as advisors to the project.

Because of the commitment to sustainable development the following guidelines were also used in the development of the site plan:

Major Design Principles and Guidelines:

- Preserve the integrity of the site's natural resources.
- Design for resource conservation & enhancement.
- Promote the wise use of renewable resources where feasible.
- Integrate the concept of recycling into all aspects of the project where feasible.
- Arrange land use in a manner, which complement each other and enhance special land characteristics and provide buffers as necessary.
- Encourage and improve connections among the site, the Town of Adams, and the Mt. Greylock State Reservation.
- Buildings and site design should reflect a New England village approach to land use patterns where feasible.
- Lodging, recreation, and education facilities should demonstrate attractive, compelling and appropriate architectural and landscape designs.

- Building designs, materials, solar orientations and other architectural treatments should help provide comfort and a better sense of well being for the users of the facilities.
- Interpretation and demonstration facilities should be designed into Greylock Center as needed and appropriate for the education of visitors.

Procedures for implementation of each of these principles are provided in a document entitled 'Greylock Center Site and Building Design Guidelines', which was reproduced in its entirely in Appendix C of the NPC.

At the August 18, 1999 meeting of the SBDC, the committee reviewed the site plan that was subsequently presented in the NPC and unanimously supported further development of the plan through the MEPA process. As the site plan progresses through preliminary and final design, the SBDC will review the site and building designs, and design specifications to insure compliance with the Master Plan.

Management and Operational Guidelines:

GMA will be expected to not only design Greylock Center in the most environmentally sensitive fashion, but also to ensure that the management and operation fulfill the Master Plan's mission, goals and objectives. To ensure fulfillment of the Master Plan the following actions have been taken:

1. An overall stewardship plan has been developed for the project that spells out enforceable guidelines on how the site's natural resources should be enhanced and protected over the long run.

2. An integrated pest management plan has been developed for the golf course.

3. A conservation restriction will be placed on approximately 790 acres to ensure long-term land protection.

4. Management and operation protocols are being developed to be part of the Master Lease. These documents are designed to identify specific, achievable objectives to ensure that the project fulfills the project goals. These protocols will be provided to the public for review and comment.

5. An education plan for the site has been developed and an education steering committee is being formed to oversee the development of the educational components of the project.

In addition, DEM and the Division of Capital Asset Management (DCAM, formerly DCPO) are committed to providing ongoing public oversight of the project to insure master plan adherence.

In conclusion, the current site plan, at the level of design presented meets the master plan in all repsects.

2.6 Consistency of Residential Build-out with Greylock Center Master Plan

The Master Plan provides a series of guidelines that have informed and shaped the resulting development proposal. These guidelines are based on principles of using traditional New England development patterns, minimizing site impacts, and using sustainable technologies. It should be noted that the proposed Village site plan is used only as a model to calculate the maximum impact of the proposed Village footprint.

2.6.1 Use of Traditional New England Development Patterns

Among the influences that shaped New England towns were the limited mobility of residents and a combination of topographic as well as environmental constraints. In planning the village of the Greylock development the design team took a pedestrian oriented approach, respected the existing topography of the site and avoided environmentally sensitive areas.

The overall layout of a traditional New England village is different from what has evolved over the past 50 years, a conventional suburban subdivision in several important respects. Historically, many New England towns were laid out using either geometric patterns around a central core or along a main roadway. The existence of a pattern to Greylock village formed by streets and buildings is not in itself a signature of a conventional subdivison or sprawl. The pattern formed by the streets of the proposed village is in keeping with patterns of traditional New England villages. The proposed village street system follows the underlying topographic contour lines. A conventional suburban street grid would ignore the contours and artificially reshape to a straight grid system of streets. The streets of Greylock Village reflect the nature of the site and its topography. Finally, the proposed village street system is a series of connected loops. The mountain cottages proposed in the DEIR featured cul du sacs. In response to public comments, these housing units have been moved into the village. The absence of cul du sacs has improved the traditional village quality of the proposed development.

A central part of many New England villages is the town common or village green. Village greens serve as a gathering point for community activities throughout New England and a central organizing element to the Village plan. The heart of Greylock Village features a green that will be surrounded by the hotel-conference center, the Inn, the Berkshire Institute building and a general store. The village green will serve as a meeting point for guests, day visitors to Mt. Greylock and the local residents. Figures 2-2 and 2-3 show the Village green concept. Greylock's trail network connects the village green to the rest of the site and nearby Mt. Greylock Reservation. In the winter, cross-country skiers will also use these trails to connect to the village green. The village green will feature a small pond that will be used by picnickers in the summer and ice skaters in the winter. All the proposed housing and lodging facilities are located within walking distance to the village green. (See section 2.3 for a discussion of the trail system and public access).

2.6.2 Minimization of Site Impacts

As required in the Master Plan, GMA and DEM have strived to minimize visual impacts of the proposed development. The view of the village from the summit of Mt. Greylock is a paramount concern to both GMA and DEM. To assess the visual impact of the proposed village on the view from the summit of Mt. Greylock a visual assessment was commissioned from by DEM. According to the visual analysis, no part of the village site can be seen from the Summit Centennial Commemorative viewing area. From the tower on the summit, a portion of the site is visible. From the Adams Overlook viewing area, the majority of the site is visible. GMA and DEM will continue to monitor the visual impacts of the development and modify the design to reduce negative visual impacts. In addition, no part of the village is visible from the main street in downtown Adams, or from any point on West Road.

GMA is also committed to minimizing other visual impacts such as utility lines and will provide new underground utility lines as well as bury existing above ground lines wherever feasible and compatible with the schedule of the phased project. Finally, GMA is required to minimize the amount of night lighting in order to reduce light pollution upon the dramatic night skies in the Berkshires. As stipulated in the Master Plan, GMA will propose a minimal amount of night lighting for public safety and position light fixtures close to the ground to minimize eye glare.

The Greylock project team set a goal of designing the development outside of wetland and Riverfront Areas to the maximum extent possible given the site program. Based on DEP regulations, a maximum area of 5,000 square feet or roughly 1/8 of an acre of net wetland impacts was set as a threshold for the entire project. This was an ambitious threshold to meet since the 5,000 square

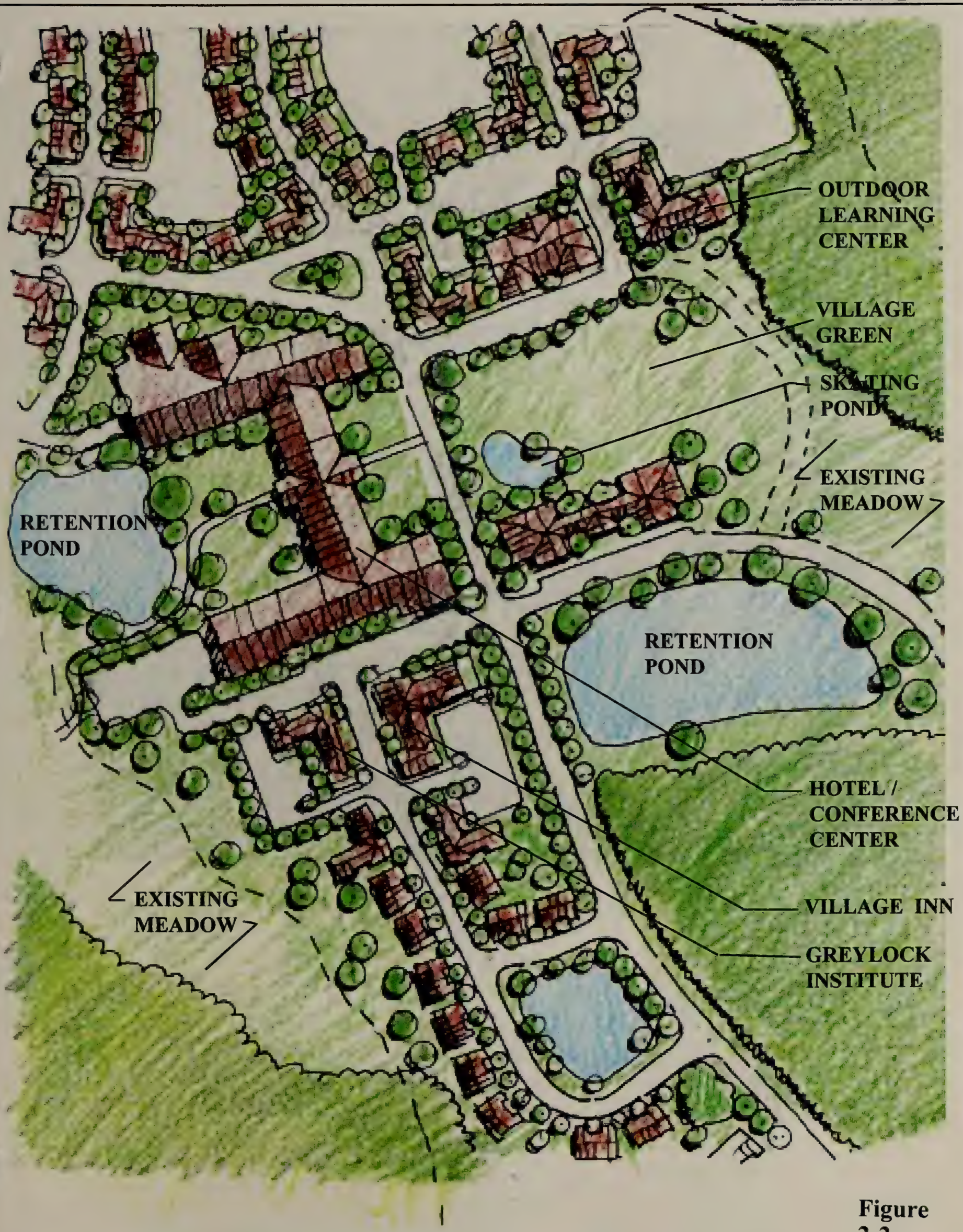

OUTDOOR LEARNING CENTER
VILLAGE GREEN
SKATING POND
EXISTING MEADOW
RETENTION POND
RETENTION POND
HOTEL / CONFERENCE CENTER
VILLAGE INN
GREYLOCK INSTITUTE
EXISTING MEADOW

Figure 2-2

Greylock Center Village concept

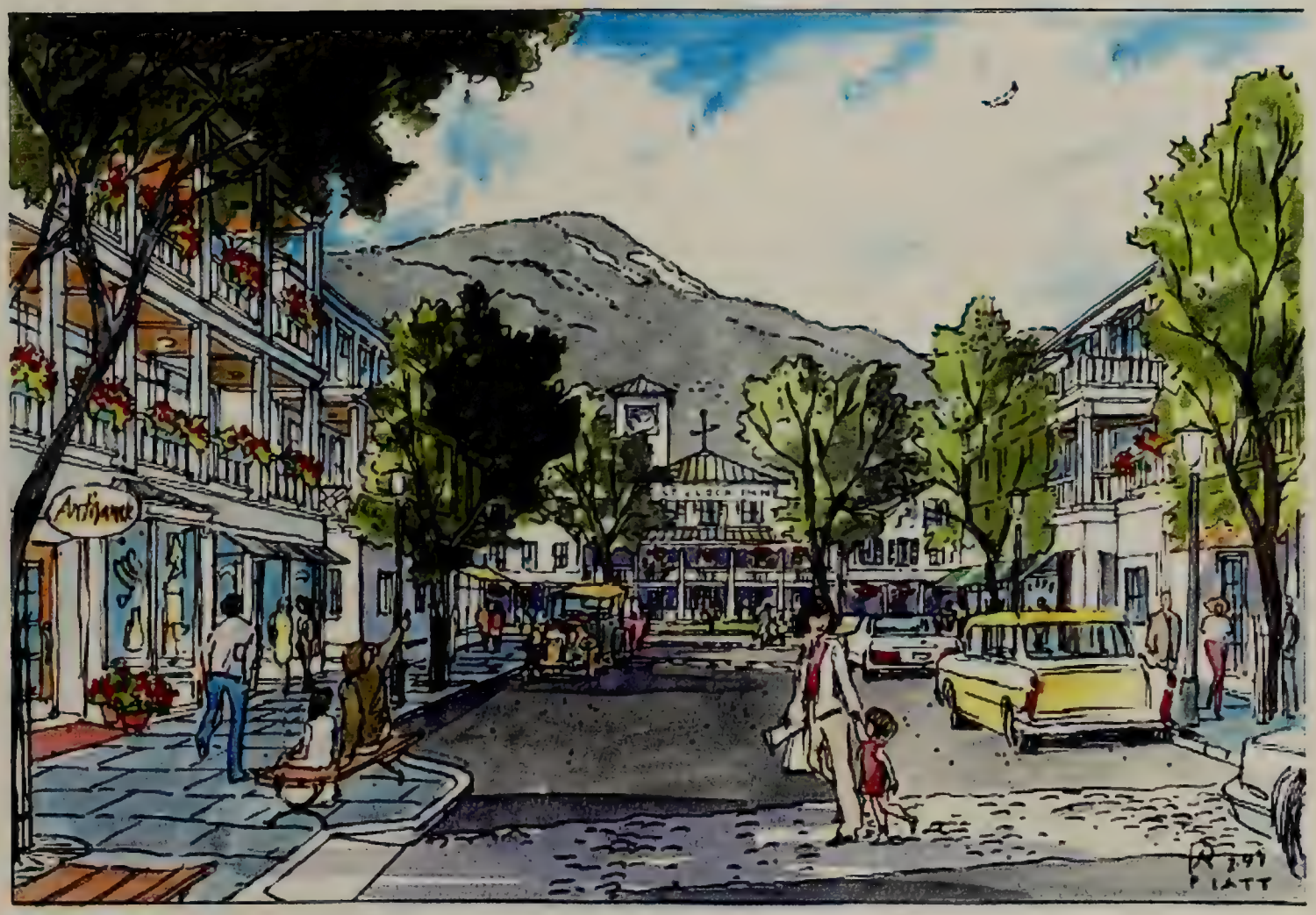


Figure 2-3

foot level is primarily oriented towards much smaller projects. By keeping the entire development below 5,000 square feet of wetland impacts, the project team has significantly minimized the overall impact on the site's wetland habitats. The proposed village has no wetland encroachment.

GMA is also committed to using native plants in the landscaping surrounding the new buildings in the village. As highlighted in section 2.2.1 GMA is committed to limiting the amount of tree clearing for the village and the use of conventional lawns.

To further ensure that the proposed development has a minimal impact on the site's ecosystem, Village buildings have been located on small lots or in tight clusters. The current Greylock proposal would develop 51 acres in the village and feature a total of 300 units of housing in small single and two-family houses as well as multi-family buildings. All of the previous development proposals featured more housing units and impacted substantially more land. The original Elco Resort planned to have 803 housing units accompanied by a development footprint, excluding golf and trails, of 361 acres. Heritage Greylock, the last proposed development, featured 1,275 housing units with a development footprint, excluding golf course and trails, of 457 acres.

During the course of the EIR process, GMA and DEM have responded to public comments that requested an increased clustering of proposed buildings by consolidating the housing components. In response to public comments the mountain cottages proposed in the DEIR have been relocated and incorporated into the village plan. Also in response to public comments the housing proposed along the lower portion of West Mountain Road in the Notice of Project Change has been moved into the Village. These site plan modifications are also discussed in Section 2, Site Planning.

The only housing that remains outside of the Village is the staff housing for Nature's Classroom at Greylock Lodge. The staff of Nature's Classroom requires a location near the Lodge complex to facilitate their involvement in school programs. The location of the staff housing is both close to the campus of Nature's Classroom while providing necessary privacy for staff. Further, these residential units will demonstrate environmental technologies that can be showcased to school children and others attending Nature's Classroom's programs.

Finally, in the process of constructing the buildings at Greylock Center, the construction contractor will be required to draft a plan for the recycling and reuse of construction waste. For example, if lumber is used for concrete forms, the contractor will consider the reclaiming and reuse of the lumber in their plan.

The design team for buildings at Greylock Center is encouraged to use salvaged material and to design building components for future reuse or recycling.

2.6.3 Use of Sustainable Technologies

The Greylock Master Plan encourages the use of technologies that reduce the environmental impact of the proposed development. To guide the integrating of environmental technology in the Village and all other buildings planned, a building code based on sustainable development principals was drafted. The Greylock Sustainability Criteria cites performance levels to be achieved for building systems and building materials. Criteria were based on extensive research. Existing performance based criteria were reviewed including: the Leadership in Energy and Environmental Design or LEED program, the environmental standards for lodging created by Green Seal, the Energy Star Building Program at the Environmental Protection Agency and the draft guidelines issued by CET. The Greylock Building Criteria will be a living document, incorporating lessons learned from phase one construction as well as new technologies. Again, all buildings, whether commercial or residential, must use the building code in their design process.

Buildings at Greylock will be subject to multiple layers of review. All buildings at Greylock must go through the local permitting process in the town of Adams. Local officials and the public will have the opportunity to comment during this process. In addition, all building designs will be reviewed by the Greylock Site and Building Design Committee. The members of Site and Building Design Committee are charged with reviewing the proposed buildings using the goals and objectives of the Greylock Center Master Plan. The current membership includes five licensed design professionals, among others. Furthermore, the Greylock Sustainability Criteria will be peer reviewed by the Site and Building Design Committee.

GMA has evaluated several environmental technologies for potential use on site. While the following technologies have been evaluated in the context of the proposed Greylock Lodge, their use is not confined to this one part of the entire project. Housing and other parts of the Village will benefit greatly from the initial use of environmental technologies at Greylock Lodge and the golf clubhouse and maintenance building.

Finally, GMA is evaluating compact stormwater treatment systems to reduce the amount of land consumed for stormwater management and improve water quality (see Section 5 for a detailed discussion of stormwater). In particular, a Massachusetts based technology called the "storm treat system" (STS) appears promising. This innovative technology consists of a series of sedimentation chambers and constructed wetlands, which are contained within a modular 9.5-

foot diameter recycled-polyethylene tank. STS greatly exceeds all requirements for treating stormwater. In addition, STS removes critical pollutants such as phosphorus and fecal coliform. Currently, fecal coliform is an unregulated pollutant, despite the fact that it severely degrades water quality and impairs uses such as swimming and fishing in water bodies across the Commonwealth. By removing both regulated and unregulated pollutants, GMA is being a good neighbor. Improvements in water quality will help restore aquatic habitat downstream and assist in expanding the allowed human uses of local streams and rivers. After stormwater has been treated by STS it is released into adjacent soils. The local release of stormwater will recharge the ground water supply on site. US Environmental Protection Agency Region 1 selected STS for an Environmental Technology Innovator awards for 1999.

Renewable Energy

At this early stage in the design process, several types of renewable energy are being evaluated. The following goals and principles guided the initial approach taken toward renewable energy.

- Highlight new opportunities, such as certified green energy providers, made possible through the deregulation of the energy Massachusetts market
- Integrate demand side management techniques with the use of renewable energy sources
- Demonstrate different renewable energy sources and technologies
- Strive for an annual climate neutral use of energy at Greylock facilities
- Provide educational opportunities concerning sources of renewable energy, the use of new technology, and information on green energy in the newly deregulated Massachusetts market.
- Reuse existing on-site resources
- Feature suppliers and manufacturers of technologies located in the town of Adams, Berkshire County, Commonwealth of Massachusetts and the New England region.

As documented in the NPC, GMA is exploring several alternative energy sources, which are initially being considered for Greylock Lodge (the first buildings expected to be constructed at Greylock Center), and several of these technologies will also be considered for commercial and residential development. These technologies include geothermal energy (discussed at length in the NPC), solar power (discussed in the NPC and at greater length

below), and biomass (briefly introduced in the NPC, with findings of a CET study presented below).

Solar Power - Photovoltaics

Preliminary research was conducted by GMA into the use of Photovoltaic or PV cells to supply electricity to Greylock facilities. Ideally, Greylock facilities would erect PV systems on their roofs and be self-reliant in terms of electricity. Excess electricity would be sold into the power grid as green power. Achieving this scenario is challenging in several ways.

While the cost of PV cells has fallen in recent years, the capital costs are still comparatively high. Today, PV can be cost effective when estimates are based on life cycle costing and the location is a remote site. When the cost of wiring is taken into account for remote sites, a stand-alone PV system can be cost effective. To meet the needs of Greylock Lodge, a complete PV system was estimated at $673,000. The close proximity of Greylock Lodge to the existing power lines does not offset the capital costs for a stand alone PV system to meet all the energy needs of the Lodge. Finally, the size of the PV system would exceed the generation limit in the Commonwealth of 60 kW. Given these constraints, GMA investigated several other applications for PV. A goal of trying to get the electricity needs of the heating and cooling system for Greylock Lodge off the grid on an annual basis was explored.

Greylock Sustainability Criteria will make sure that building designers examine both active and passive solar options. Since the pace of technological innovation promises to reduce these costs in the near future the Sustainability Criteria specifies that buildings be designed to allow for the future use of PV. The newly constructed Thoreau Institute in Lincoln, MA, which is devoted to preserving the works of Henry David Thoreau, and is widely cited as an example of sustainable building, was designed to accommodate the future use of PV. Taking site topography into account, proposed buildings at Greylock were sited to take advantage of southern exposures. Also, design professionals will be encouraged to use a 30-degree pitch for south facing roofs, the ideal angle for PV cells. Wiring conduits to the roof will be installed to improve the ease of wiring for a retrofitted PV system. These measures will allow Greylock buildings to use PV at a later date.

Biomass

Biomass refers to the use of any organic material that is available on a renewable basis as a fuel source. Biomass fuels can be used to meet heating and cooling needs of Greylock buildings. CET examined biomass and focused on wood based biomass fuels.

While there are a variety of biomass fuels, wood was examined as the primary fuel for several reasons. First, wood is a locally available resource. Virtually all aspects of the wood products industry from logging to refined paper production are a part of the Berkshire economy. Second, wood based biomass can help the wood products industry reduce its waste stream. Many sawmills in the Berkshires have difficulty disposing of sawdust produced as a by-product of their manufacturing process. Wood based biomass systems use sawdust as a fuel or as part of producing pellets, a refined biomass fuel. By helping the local wood products industry find a market for sawdust, Greylock helps a local industry's bottom line as well as reducing their waste stream. Third, when sustainable forestry practices are employed wood is a renewable energy source. Greylock can help promote sustainable forestry by using fuel sources such as sawdust from sawmills that are purchasing wood from certified sustainable forests. Fourth, the price and supply of wood fuel is potentially less volatile especially when compared with fossil fuel alternatives. Although fossil fuels are inexpensive now, it seems unlikely that this will be true in ten or twenty years. Finally, wood is the only common fuel that is not a net contributor of carbon dioxide (CO_2), a greenhouse gas, into the atmosphere. Trees absorb more CO_2 than is released into the atmosphere when wood is burned. Again by using wood from forests managed in a sustainable fashion, Greylock ensures that the role of our forests in balancing our climate is not upset.

CET investigated three types of wood fired systems: pellet stoves, direct burn furnaces, and two chambered furnaces using a wood chip gasification system. Research conducted by CET covered the following: the pros and cons of each system; the types and size loads they would meet, wood sources and costs; potential environmental impacts; equipment and installation costs, storage requirements for fuel; and annual operational requirements. In addition, CET interviewed several end users of wood fired systems.

Of the three wood fired systems CET recommended a two chambered furnace using a wood chip gasification system. When used for the size buildings anticipated at Greylock the wood chip systems operate at a higher overall efficiency than pellet stoves. While combustion efficiency is high with pellet stoves, the overall efficiency is typically between 65 to 75%. A comparable two-chamber wood chip gasification system has an overall efficiency of 85%. Also, wood chips are more cost effective than pellets at the scale of project being considered at Greylock. Conservative estimates for wood chips range between $23 to $28 per ton, whereas the cost of pellets was estimated at between $120 to $200 per ton. The two chamber furnaces have the added feature of being able to be converted to other fuels such as natural gas or wood pellets if circumstances warrant.

CET interviewed several end users of wood chip gasification systems. Both the Society for the Preservation of New Hampshire Forests, a land trust which specializes in forestlands, and the Athol School District in Massachusetts use wood chip systems to meet their heating needs. In both cases, a fossil fuel heating system was also installed as a backup. ChipTech, a Vermont based company, designed both wood chip systems. GMA has requested a bid for a wood chip gasification system from ChipTech for the Greylock Lodge complex and the golf course clubhouse. The estimate will include the storage requirements for a supply of wood chips as well as the space needs of the gasification system.

CET also interviewed staff with Catamount Pellet, an Adams based suppler of wood pellets. Catamount Pellet primarily supplies wood pellets to residential users, which is a smaller scale user group than Greylock Lodge or the golf course clubhouse. In considering biomass for these facilities, staff with Catamount Pellet recommended systems that could accommodate a variety of fuels, including both wood chips and pellets. For the proposed residences, pellet stoves will be considered. Catamount Pellet uses sawdust from a local sawmill in their manufacturing process. CET interviewed Berkshire Hardwoods, the sawdust supplier, to understand their scale of delivery for Greylock applications. Currently, Berkshire Hardwoods delivers 4 loads per week or about 80 tons of woodchips to Catamount. It may be possible to coordinate delivery schedules of woodchips with Catamount Pellet and take advantage of economies of scale.

Impervious Surfaces

This FEIR conservatively estimates the amount of impervious surfaces to be created on the site (as presented in stormwater calculations in Section 5). However, DEM and GMA will continue to investigate and develop alternatives to impervious surfaces (such as parking lots) wherever practical.

3.0 WETLANDS

3.1 Overview

The Greylock Center property contains an extensive network of perennial and intermittent streams, as well as several ponds primarily located within the central portion of the site (Greylock Glen). Throughout the site planning process, efforts have focused on avoiding/minimizing both direct and indirect impacts to this surface water network, primarily by maximizing the distance between proposed development activities and surface waters onsite.

The distribution and dendritic nature of stream systems on the Greylock Center property, however, precluded the total avoidance of these resource areas primarily with respect to siting of the proposed multi-use trail system. In an effort to provide user access throughout the property (in keeping with the existing usage patterns of visitors to the site) and enable trail user exposure to the diverse natural features exhibited onsite, it was necessary to site waterway/wetland trail crossings at selected locations.

Collectively, 44 potential waterway/wetland impact areas have been identified. Of this total, 35 sites are associated with the proposed multi-use trail system, 5 sites are associated with the proposed golf course and 3 sites are associated with construction/maintenance access. In the latter instance, 2 of the 3 sites will become part of the multi-use trail system following construction. The final site is associated with the bridging of Pecks Brook by the proposed connector road.

At 26 of the 44 potential waterway/wetland impact areas referenced above, the Greylock Center project will result in a cumulative total of 4,675 square feet (sf) of Bordering Vegetated Wetland (BVW) impacts. There are no waterway/wetland at the other 18 potential impact areas. This impact encompasses all proposed activities associated with the full-build-out of both Phase I and Phase II (i.e., development along West Mountain Road, the clubhouse, multi-use trail system, golf course, golf cart routing, connector road and construction/maintenance access). The majority of these impacts (approximately 4,100 sf) are related to alteration of vegetative cover, whereas the area of actual soil disturbance is only estimated to entail 575 sf of BVW impacts due to the widening of two existing trail segments (crossings 5a and 5c, discussed further below).

In addition, 784 linear feet of Bank totaling approximately 564 sf, and 2,364 sf of Land Under Water (LUW) will be indirectly affected, at least to some degree, due to shading at 24 trail crossings. At these locations, bridges will be constructed to traverse over defined banks and LUW, though no physical alteration to these wetland resources is proposed. A Wetland/Wildlife Habitat

Evaluation has been performed to address potential impacts due to the shading of Bank and LUW, and is contained in Appendix E.

The total footprint of Phase I and II development (primarily components of the multi-use trail system) within Riverfront Area (RFA) is 731,317 sf, or 16.79 acres. Of this total, approximately 290,964 sf (6.68 acres/39.8%) will occur within the inner riparian zone (i.e. within 100' of perennial waterways), with the remaining 440,353 sf (10.11 acres/60.2%) to occur within the outer riparian zone (i.e. within 100'-200' from perennial waterways). Collectively, RFA throughout the Greylock Center property totals 14,604,014 sf, or 335.26 acres. Accordingly, project-related RFA impacts only will involve 5 percent of the RFA onsite.

The majority of impacts to wetland resources occur in association with Phase I, which involves 4,200 sf of BVW impacts, and 520,597 sf (11.95 acres) of RFA encroachment. The project also will result, however, in the abandonment and restoration of 174,240 sf (4.0 acres) of existing trails within RFA.

Table 3-1 documents wetland impacts anticipated to result from the Greylock Center project, while Table 3-2 indicates calculations of RFA encroachment associated with individual project elements.

With respect to wetland resources and associated buffers, as well as for the entirety of the property, best management practices will be implemented throughout the construction period to avoid/minimize wetland resource impacts. Integral amongst these practices, will be soil erosion and sediment controls conducted in accordance with the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* (Franklin, Hampden, Hampshire Conservation Districts; March, 1997) and the *Western Massachusetts Streambank Protection Guide* (Franklin, Hampden, Hampshire Conservation Districts; January, 1998), and a Stormwater Pollution Prevention Plan designed to control stormwater runoff during construction. All controls will be maintained in proper working order throughout the construction period and until issuance of a Certificate of Compliance by the Adams Conservation Commission. As described in Section 6.2, a wetland compensation plan also will be implemented relative to anticipated BVW impacts. Collectively, these measures will ensure that project implementation will not result in significant adverse impacts to wetlands.

TABLE 3-1
SUMMARY OF ESTIMATED WETLAND IMPACTS
GREYLOCK CENTER
ADAMS, MA

PHASE I

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
TRAIL SYSTEM						
1	Existing Crossing over Thiel Road w/Culvert to Remain	P (Hoxie Brook)	N/A	N/A	N/A	None
2	Existing Trail Crossing - Wood Bridge w/Headwalls*; Deck to be Replaced	P (Hoxie Brook)	6/27	S/S	Clearing	75
3	Existing Trail Crossing - Wood Bridge w/Headwalls*; Deck to be Replaced; Combined Trail/Cart Path	P (Hoxie Brook)	6/22	S/S	Clearing	25
4	Existing Road/Trail Crossing through Wetland to be Bridged	P	4/24	F	Clearing (Assumes 14' wide X-section)	25
5	Existing Road/Trail Crossing through Wetland to be Bridged	I	4/45	F	Piles (Assumes 14' wide X-section)	25

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
5a	Existing Road/Trail Crossing through Wetland to be Widened	N/A	N/A	F-EM	Clearing/Fill (Assumes 14' wide X-section)	450**
5b	To be Bridged	I	8/23	F	Clearing	75
5c	Existing Road/Trail Crossing w/Adjacent Wetlands - Culvert* to be Removed and Channel to be Bridged	I	3/5 (Channel only)	F-S/S	Clearing/Fill (Assumes 14' wide X-section)	125
9	To be Bridged	N/A	4/76	S/S	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	250
10	To be Bridged - Combined Trail/Cart Path	N/A	4/47	EM-S/S	Clearing/Piles	300
12	Existing Road/Trail Crossing w/Culvert* to Remain	P	N/A	N/A	N/A	None
15	Existing Trail Crossing - Wood Bridge w/Headwalls*; Deck to be Replaced	P	6/18	S/S-EM	Clearing	25
16a	Existing Road/Trail w/Adjacent Wetlands	N/A	N/A	EM	N/A	None

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
16b	Existing Road/Trail Crossing w/Adjacent Wetlands and Culvert* to Remain - Combined Trail/Cart Path	I	N/A	F-S/S-EM	N/A	None
16c	Existing Road/Trail Crossing w/Adjacent Wetlands and Culvert* to Remain	I	N/A	EM-S/S	N/A (Assumes 8' wide Class III trail/bridge)	None
18	To be Constructed in conjunction W/Pecks Brook Bridge	P (Pecks Brook)	25/104	F	Clearing	500
19	Existing Headwalls w/o Deck* to be Bridged	P (Pecks Brook)	4/20	S/S-EM	Clearing	125
22	To be Bridged	P	4/18	F	Clearing	75
23	To be Bridged	P	30/75	F	N/A	None
49	To be Bridged	N/A	4/160	SS-EM	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	125

Table 3-1

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
50	To be Bridged	N/A	4/50	EM	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	50
57	To be Bridged	P (Hoxie Brook)	4/45	F	Clearing/Piles	300
59	To be Bridged	N/A	4/180	EM	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	125
60	Existing Trail Crossing through Wetland to be Bridged – Combined Trail/Cart Path	N/A	3/15	EM	N/A	None
63	To be Bridged	I	3/10	F	N/A	None
GOLF COURSE						
16d	To be Cleared for Fairway	I	N/A	F	Clearing	600
	Cart Path – Existing Trail Crossing w/Culvert to Remain	I	N/A	F	N/A	None
55	To be Cleared for Line of Sight	I	N/A	SS-EM	Clearing	750

Crossing Number	Crossing Type	Bridge Height/ Stream Class [Perennial/ Intermittent (P/I)]	Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
62	To be Cleared for Line of Sight	I	N/A	F	Clearing	150
GOLF CART ROUTING						
13	Existing Crossing over Gould Road w/Culvert	P	N/A	N/A	N/A	None
14	Existing Crossing over Gould Road w/Culvert	N/A	N/A	N/A	N/A	None
CONSTRUCTION/MAINTENANCE ACCESS						
22a	Existing Trail Crossing through Wetland To be Bridged – To Become Phase II Trail	P	4/15	F-EM	Clearing	100
34	Existing Road/Trail Crossing w/Culvert* to Remain - To Become Phase I Trail for Winter Use Only	P	N/A	N/A	N/A	None
56	To be Bridged	P (Hoxie Brook)	8/30	F	Clearing	125

* Requires verification of existing headwall/culvert size and integrity

** Assumes wetland-related presumptions of significance are overcome for existing dirt road/trail totaling 1,595 ft^2

† All bridge heights/lengths are approximate

†† F = Forest; S/S = Scrub/Shrub; EM = Emergent

††† Unless noted otherwise, all impact areas are based upon a trail cross section width of 16'

PHASE I WETLAND IMPACT TOTALS

MULTI-USE TRAIL SYSTEM	2,675 SF
GOLF COURSE	1,500 SF
GOLF CART ROUTING	None
CONSTRUCTION/MAINTENANCE ACCESS	225 SF
PHASE I WETLAND IMPACT SUMMARY	**4,400 SF**

PHASE II

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
TRAIL SYSTEM						
16	Existing Trail Crossing w/Culvert To Remain	P	N/A	N/A	N/A	None
17	Existing Crossing Over Gould Road w/Culvert	P	N/A	N/A	N/A	None
27	Existing Wood Bridge to be Replaced	P	3/10	F	N/A	None
28	Existing Pallet Bridge to be Replaced	P	4/6	F	Clearing	25
29	To be Bridged	P (Pecks Brook)	4/25	F	N/A	None

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
30	Existing Trail Crossing through Wetland To be Bridged	I	4/31	F	Clearing	150
36	Existing Wood Bridge to be Replaced	P (Pecks Brook)	4/30	F	N/A	None
39	To be Bridged	I	4/12	F	Clearing	50
41	To be Bridged	I	6/35	F	N/A	None
43	To be Bridged	I	5/12	F	Clearing	50
46	To be Bridged	I	10/35	F	N/A	None

PHASE II WETLAND IMPACT TOTALS

MULTI-USE TRAIL SYSTEM	275 SF

PHASE I AND II WETLAND IMPACT SUMMARY

PHASE I	**4,400 ft^2**
PHASE II	**275 ft^2**
TOTAL	**4,675 ft^2**

Table 3-1

Riverfront Area Impacts

Phase I Trails

		Outer Riparian Zone (sf)	Inner Riparian Zone (sf)	Total (sf)	Total Acres
Cart Path		27,040	10,768	**37,808**	**0.87**
Golf/Hiking Combined		21,232	9,888	**31,120**	**0.71**
Winter Use Only		1,872	2,592	**4,464**	**0.10**
Winter Use/Cart Path Combo		9,952	4,240	**14,192**	**0.33**
Class I (16' wide corridor)					
	New	44,816	57,360	**102,176**	**2.35**
	Existing to be Improved	28,816	46,304	**75,120**	**1.72**
Class II (14' wide corridor)					
	New	29,834	27,216	**57,050**	**1.31**
	Existing to be Improved	26,740	36,554	**63,294**	**1.45**
Class III (8' wide corridor)					
	New	6,144	0	**6,144**	**0.14**
	Existing to be Improved	0	0	**0**	**0.00**
Total		196,446	194,922	**391,368**	**8.98**

Table 3-2

Riverfront Area Impact Calculations

Riverfront Area Impacts

		Outer Riparian Zone (sf)	Inner Riparian Zone (sf)	Total (sf)	Total Acres
Phase II Trails					
	Winter Use Only	7,168	9,408	**16,576**	**0.38**
	Winter Use/Cart Path Combo	0	0	**0**	**0.00**
	Class I (16' wide corridor)				
	New	50,640	27,200	**77,840**	**1.79**
	Existing to be Improved	36,100	15,324	**51,424**	**1.18**
	Class II (14' wide corridor)				
	New	22,652	23,450	**46,102**	**1.06**
	Existing to be Improved	7,378	4,704	**12,082**	**0.28**
	Class III (8' wide corridor)				
	New	3,960	2,736	**6,696**	**0.15**
	Existing to be Improved	0	0	**0**	**0.00**
	Total	127,898	82,822	**210,720**	**4.84**
Golf Course					
		109,311	5,451	**114,762**	**2.63**
	Total	109,311	5,451	**114,762**	**2.63**
Connector Road/Bridge					

Table 3-2 Riverfront Area Impact Calculations

Riverfront Area Impacts

	Outer Riparian Zone (sf)	Inner Riparian Zone (sf)	Total (sf)	Total Acres
	6,698	7,769	**14,467**	**0.33**
Total	6,698	7,769	**14,467**	**0.33**
Grand Total	440,353	290,964	**731,317**	**16.79**
Total Riverfront Area			**14,604,014**	**335.26**
% Riverfront Area Impacted	0.03	0.02		**0.05**
Existing Trail to be Abandoned	100,512	73,728	**174,240**	**4.00**

Table 3-2

Riverfront Area Impact Calculations

3.2 Impacts to Bank and Land Under Water

3.2.1 Background

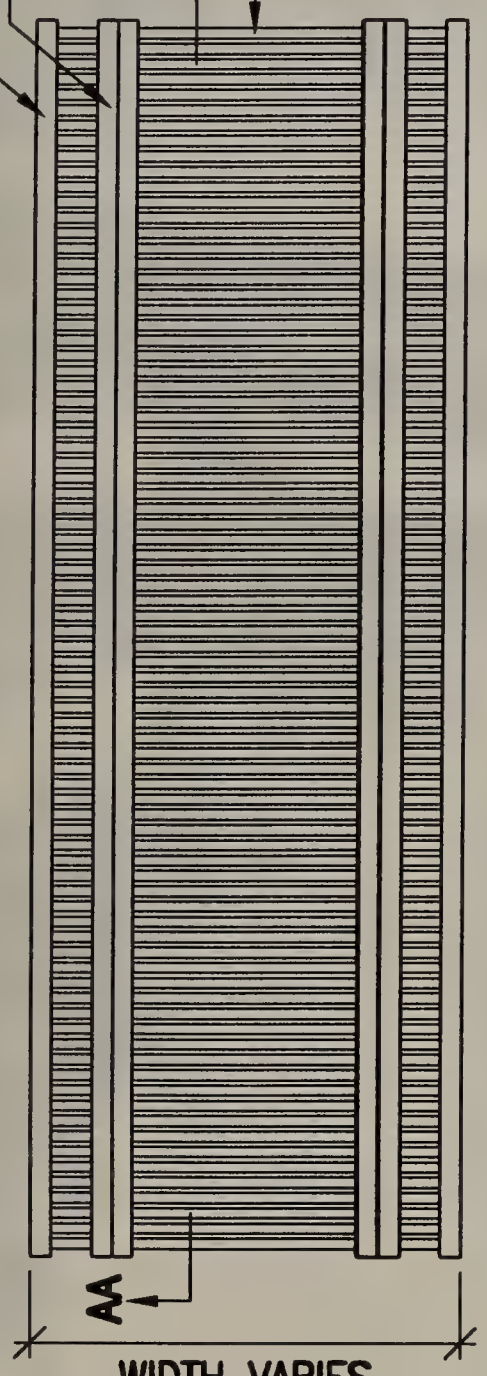
As stated above, 784 linear feet of Bank totaling approximately 564 sf, and 2,364 sf of Land Under Water (LUW) will be indirectly affected, at least to some degree, due to shading at 24 crossings. At these locations, bridges will be constructed to traverse over defined banks and LUW, though no physical alteration to these wetland resources is proposed. A prototypical cross section of proposed bridges to be constructed in conjunction with resource crossings is presented in Figure 3-1.

From a regulatory perspective, the MA Wetlands Protection Act (MA WPA) regulations require the conduct of wildlife habitat evaluations for activities resulting in the alteration of certain resource areas above a specified threshold. With respect to the proposed Greylock Center project, only bank resources may be affected beyond the stated threshold. As set forth at 310 CMR 10.54(4)(a)5, activities resulting in bank alterations "up to 10% or 50 feet (whichever is less) of the length of bank found to be significant to wildlife habitat shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60 [Wildlife Habitat Evaluations]."

At a meeting held 9 August 1999 at the MA Department of Environmental Protection Western Regional Office (MA DEPWERO), MA DEP/WERO indicated that bank shading may be considered a resource alteration. In this event, wildlife habitat evaluations would be required if shade-related effects exceeded the bank impact threshold referenced in the regulations. Information regarding impacts to land under water also was requested by MA DEP/WERO.

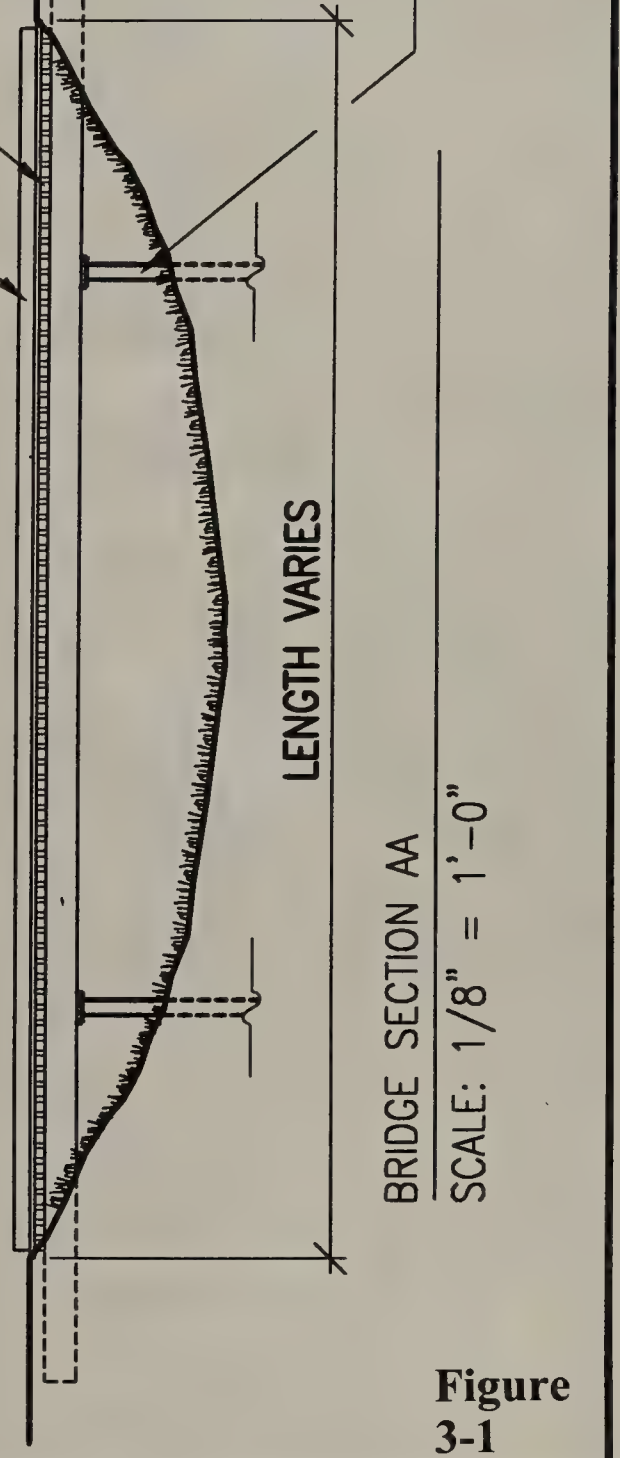
In light of the above, field investigations were implemented to determine the extent of both project-related impacts to banks and land under water associated with proposed resource crossings. Impacts to vegetated wetlands also were assessed.

The field investigations indicated that project-related activities at the 24 crossing sites exhibiting bank and land under water will not result in any direct impacts to either resource. This is because each of these crossings will be bridged, with any requisite abutments and pilings being located outside these resource areas. Accordingly, other than potential construction-related impacts to be mitigated via the implementation of soil erosion and sediment controls, the only potential impact to banks and land under water will be associated with shade-related effects.



BRIDGE PLAN
SCALE: 1/8" = 1'-0"

NOTE: FOR INDIVIDUAL CROSSING LENGTH AND WIDTH, SEE 1"=40'-0" CROSSING PLANS



BRIDGE SECTION AA
SCALE: 1/8" = 1'-0"

Figure 3-1

GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management
DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

Scale: As shown
Date: January 24, 2000

PROTOTYPE WOOD BRIDGE CROSSING



Representative Photograph of the Conceptual Trail System Bridge Type

Figure 3-2

Field investigations also confirmed that only bank resources potentially will be affected beyond the regulatory threshold. Consequently, wildlife habitat evaluations were conducted at representative locations (8 of the 24 proposed bridge locations) where potential bank-related impacts (i.e. shading due to bridge construction) would occur. These evaluations were conducted in accordance with MA WPA regulations set forth at 310 CMR 10.60, as well as MA DEP Wetlands Program Policy 88-1 and Wetlands Wildlife Advisory #2.

3.2.1 Findings

Since bank resources will not be physically disturbed by proposed activities, topographic and soil conditions will remain unchanged. Consequently, wildlife-related functions presently performed by banks at each of the proposed crossing sites will not be adversely affected. At one location (Crossing 5c), in fact, bank resources will be increased due to the removal of an existing culvert and the installation of a bridge. Similarly, land under water at proposed bridge crossings also will not be physically disturbed, such that substrate and habitat conditions will remain unchanged. Moreover, all bridge heights at each waterway/wetland crossing will be high enough to allow the continued movement of aquatic species between upstream and downstream locations.

With respect to plant community composition and structure, the need to clear/prune vegetation was avoided/minimized, to a large extent, by the use of existing roads/trails. For instance, vegetative clearing associated with any one waterway/bank crossing location will result, at most, in the loss of vegetative cover over a surface area of only approximately 500 SF. This will occur at Crossing 18, in conjunction with construction of the Connector Road. Vegetative cover will be reduced by approximately 300 SF at Crossing 57. At all remaining waterway/bank crossing locations, vegetative cover will be reduced by 150 SF or less, with no clearing being required at 7 of the 24 proposed waterway/bank crossings. These localized negligible losses in vegetative cover will not adversely affect wildlife resources, particularly in light of the extensive coverage provided by both wetland and upland vegetation to remain undisturbed adjacent to each waterway/bank crossing location.

Moreover, it is important to note that the above-referenced reductions in vegetative cover primarily refer to vegetated wetlands, since actual bank and in-water vegetation characteristically is sparse. At many waterway/bank crossings, in fact, vegetative clearing primarily is confined to tree branches overhanging the proposed trail route, rather than trees/saplings/shrubs actually rooted within the trail alignment. Consequently, bridge placement will not significantly affect the extent of bank or in-water vegetation due either to the bridge's direct physical presence or indirectly due to shading.

In summary, the proposed Greylock Center project will not adversely affect bank-related wildlife habitat or LUW, including in-stream habitat conditions.

3.3 Impacts to Bordering Vegetated Wetlands (BVW)

3.3.1 Multi-Use Trail System

In response to commenters' concerns, the trail system has been revised to reduce the number of wetland crossings proposed in this FEIR as compared with the site plans presented in the DEIR and NPC. Nearly 70 trail crossings potentially resulting in wetland resource impacts were presented in the DEIR, whereas 39 crossings with similar potential were presented in the NPC. Within this FEIR, 36 trail crossings potentially resulting in wetland resource impacts are proposed. Each of these latter crossing totals includes crossings 22a and 34 which, although categorized as construction/maintenance access, will become part of the trail system following construction.

Rather than renumbering the trail crossings in the FEIR plan, the numbers used to identify individual crossings are the same as those presented in the NPC; gaps in the numbering sequence represent crossings that have been eliminated. The relationship between the trail system and all Greylock Center program components is illustrated in Figure 1-1.

The multi-use trail system to be constructed during Phase I of the Greylock Center build-out anticipates 2,675 SF of wetland impacts associated with BVW crossings, while trails to be constructed under Phase II will result in 275 sf of BVW impacts. An additional 100 sf of BVW impact will be associated with crossing 22a, a construction crossing to become part of the Phase II trail system. No BVW impacts are associated with crossing 34. Impacts associated with each proposed wetland crossing are identified in Table 3-1, while 1″=40′ Phase I trail crossing plans are provided in Appendix F.

As the Summary of Estimated Wetland Impacts provided in Table 3-1 indicates, vegetated wetland impacts associated with Phases I and II will occur at 26 locations, totaling approximately 4,675 square feet (SF). Of this total, approximately 4,100 SF involves vegetative clearing and, therefore, the site surface will not be disturbed or filled. Vegetated wetland losses only will be associated with two locations (Crossings 5a and 5c) where trail widening will result in impacts to approximately 575 SF of vegetated wetland. Regardless, wetland creation activities at a replacement ratio of approximately 2:5 will compensate for all impacts to vegetated wetlands (see Section 6.2 and Appendix G).

With specific respect to Crossing 5a, however, it should be noted that the actual area of delineated wetland to be disturbed totals approximately 2,045 SF. This includes 450 SF of currently vegetated wetland and 1,595 SF of an existing dirt road that was incorporated into the wetland delineation and approved by the Adams Conservation Commission.

While included in the delineation as a bordering vegetated wetland, the dirt road does not play a role relative to the interests of the MA WPA for which bordering vegetated wetlands are presumed significant. These interests include the protection of public and private water supply, the protection of groundwater supply, flood control, storm damage prevention, the prevention of pollution, the protection of fisheries, and the protection of wildlife habitat

The road, itself, is not vegetated and, for much of its length, exhibits deep ruts caused by off-road vehicles. The substrate within the road's alignment, effectively, is impervious, as evidenced by the occurrence of standing water in the ruts following rainfall events and for extended periods thereafter. Due primarily to its impervious nature, this roadway wetland does not function with respect to public/private water supply, groundwater supply or pollution prevention, with this latter function being further negated by the absence of vegetation. Because of its landscape position on a slope and distance from the nearest surface water (75'-100') , it also does not function in terms of flood control or storm damage prevention. The absence of surface water suitable for fish and the lack of vegetation preclude its functioning as fish or wildlife habitat, as well.

Accordingly, since the existing roadway wetland does not play a role relative to the interests of the MA WPA, its area (1,595 SF) was excluded from the wetland impact calculation associated with trail improvements at this location.

As subsequently described in Section 6.2 and Appendix G, wetland creation activities will involve the establishment of 15, 650 sf of vegetated wetlands and 2,750 sf of open water, a total of 18,400 sf. These efforts will yield a compensation ratio for vegetated wetland impacts of approximately 2.5:1, a ratio that includes the above-referenced 1,595 SF excluded from the calculation of wetland impacts. Excluding this latter area from the calculation would yield a compensation ration of 3.35:1, and result in net increases of approximately 15,075 sf (15,650 sf minus 575 sf) of vegetated wetlands and 17,825 sf (18,400 sf minus 575 sf) of wetland resources (i.e. vegetated wetlands and open water).

3.3.2 Golf Course

Wetland impacts associated with construction of the golf course will involve wetland resource crossings for the proposed golf cart path, as well clearing to

establish sight lines between tees and greens. Golf cart path crossings have been combined with trail crossings to minimize the total number of crossings.

With respect to golf cart routing, four of the five crossings (13, 14, 16d and 60) will not result in any BVW impacts. This primarily is because sufficient area proximate to wetlands is available to avoid resource impacts resulting from cart path construction. At crossing 60, which is an existing grassed trail, impacts will be avoided via bridging of the wetland. Only at crossing 3 will actual vegetation disturbance be required. At this existing trail crossing, bridge replacement will necessitate the selective clearing/pruning of approximately 25 sf of wetland vegetation to accommodate cart path construction. This impact, however, is included above in the total referenced for Phase I trail impacts since this crossing also is to constitute part of the multi-use trail system.

Only at three locations (crossings 16d, 55 and 62) will vegetation clearing be required within BVW to establish sight lines between tees and greens. At these sites, vegetation greater than 3 feet in height will be cut, while existing vegetation less than 3 feet will remain in place. No wetland soil disturbance is proposed in association with constructing any of the golf holes. The total area of wetland impact represented by vegetative clearing/pruning in association with golf hole construction is 1,500 sf, as indicated in Table 3-1.

3.3.3 Connector Road

Wetland-related impacts associated with the proposed connector road will include the limited clearing of vegetation to accommodate bridge construction. In accordance with its conceptual design, the bridge will have a 104 foot span in order to avoid encroaching into wetlands associated with Pecks Brook, and disturbing the steep banks and adjacent upland buffer that flank the waterway. The bridge cross section will be 30 feet wide to accommodate two-way travel (two 10-foot travel lanes, with two 1-foot shoulders) and to allow for pedestrian access via a 6-foot walkway along one side of the bridge.

Presently, BVW impacts associated with the construction of the connector road bridge over Pecks Brook are estimated to be limited to the clearing of approximately 500 sf of vegetation. This number, however, will be refined during preliminary design for the bridge, which will be undertaken through a Public Works Economic Development (PWED) grant. A copy of the text portion of the PWED grant application is contained in Appendix D, along with minutes of the public hearing held on January 5, 2000 to review the PWED application.

3.4 Impacts to Riverfront Areas

RFA encroachments associated with the Greylock Center project will occur in conjunction with the proposed multi-use trail system; the golf course, cart paths, and maintenance access; and infrastructure improvements. Throughout the site planning process, efforts have been made to avoid/minimize these encroachments. As described below, however, total avoidance of these encroachments would have compromised the integrity/value of proposed site amenities(e.g. multi-use trail system), thereby undermining the basic goals/objectives mandated by Chapter 676 and associated with these project elements.

As stated above, within each RFA encroachment area, soil erosion and sediment controls will be implemented during construction. These controls will be conducted in accordance with *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* (Franklin, Hampden, Hampshire Conservation Districts; March, 1997) and the *Western Massachusetts Streambank Protection Guide* (Franklin, Hampden and Hampshire Conservation Districts; January 1998). Additionally, a Stormwater Pollution Prevention Plan designed to control stormwater runoff during construction also will be prepared and implemented. All controls will be maintained in proper working order throughout the construction period and until issuance of a Certificate of Compliance by the Adams Conservation Commission.

Each of the above mitigation measures will be implemented for all RFA activities, including RFA restoration efforts. As part of the overall Greylock Center project, the former maintenance building located at the terminus of Thiel Road will be demolished and removed. The site, presently surrounded by unpaved areas previously used for parking, will be stabilized with vegetation as part of the RFA restoration program. Trails to be abandoned within RFA also will be restored with native vegetation.

3.4.1 Multi-Use Trail System

During the 3-1/2 year site planning/design development process, numerous modifications were made to the trail system. Since the filing of the NPC, trails alignments continued to be refined to further reduce the number of wetland crossings and the extent of encroachment into RFA. In this regard, the trail system has been revised to reduce the number of wetland/RFA crossings proposed in this FEIR as compared with the site plans presented in the DEIR and NPC.

As stated above, however, trail system planning was based on the underlying principle of providing user access throughout the property (as is currently taking

place in an unregulated manner) and enabling trail user exposure to the diverse natural features exhibited onsite for environmental education. To accomplish this goal/objective, it was necessary to site waterway/wetland/RFA trail crossings at selected locations. These encroachments reflect varied skill levels, as well as differing levels of 'wilderness' experience.

The proposed Greylock Center multi-use trail network will result in 8.98 acres of incursion into RFA in Phase I, with an additional 4.89 acres resulting from Phase II trail development. These area calculations include new trail development; new trail development within previously developed portions of RFA, including re-development of pre-existing trails; and establishment of formalized trail corridors which cross over existing roads and alongside the proposed connector road. Table 3-2 identifies the total area of encroachment into RFA, categorized by construction phase, inner and outer riparian zone, and by class of trail (i.e., width of trail corridor/type of trail).

3.4.2 Golf Course

Small portions of RFA will be affected by golf course development. In each instance, however, these RFA encroachments are necessitated by design criteria associated with construction of a destination golf course required by the Master Plan, as well as site environmental constraints. From a design perspective, applicable criteria included:

- A course length of at least 7,000 yards with a par of 72;
- Multiple tee locations to accommodate golfers of varied skill levels;
- A mixture of par 3, par 4 and par 5 holes; and
- Practice facilities, including a practice tee/driving range designed to simultaneously accommodate at least 35 golfers, and be of sufficient size and quality to replicate the golf experience.

As referenced in the NPC, the application of these design criteria to the Greylock Center property resulted in numerous routing plans. Subsequently, these plans were screened relative to their potential environmental impact, including impacts with respect to wetlands, RFA and rare species habitat. Based on these alternatives screening efforts, the selected routing plan represents the plan that best meets the Master Plan goals/objectives of a destination golf course while, simultaneously, minimizing resource disturbance.

As proposed, RFA encroachment only will occur in conjunction with four golf holes, as well as the practice tee/driving range. In each instance, however, these encroachments include areas that had previously been developed for golf

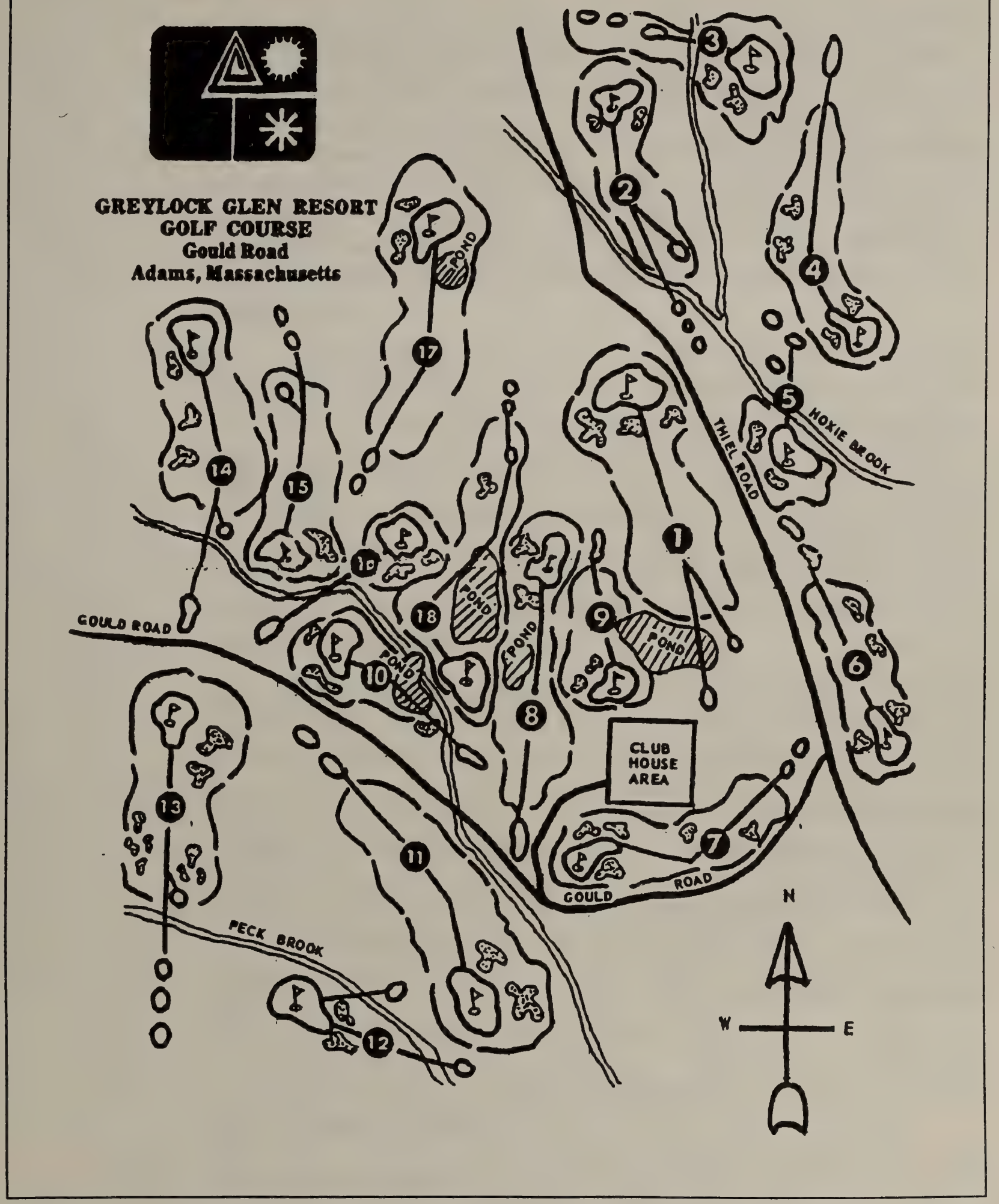
use. Specifically, these areas include the northerly portion of Hole 1, westerly portion of Hole 6, southerly portions of Holes 7 and 8, and the northern and southern portions of the proposed practice tee/driving range.

Collectively, 2.6 acres of RFA will be maintained for golf activities. Of this total, 2.5 acres will occur within the outer riparian zone, while only 5% or 0.1 acre will encroach within the inner riparian zone.

The northerly portion of Hole 1 is proposed to occupy an area formerly occupied by portions of Hole 6 of the Greylock Glen Resort golf course, presented in the Greylock Center DEIR and reproduced herein as Figure 3-3. At this location, presently dominated by old field/shrub vegetation, encroachment into the outer riparian zone associated with Hoxie Brook will be minimal and involve a small portion of the outer rough. Construction and maintenance of the rough at this location will be limited to grading, planting and turf maintenance/mowing following grow-in. This encroachment is necessary in order to maximize the safe distance of the fairway from Thiel Road and maintain as much of Thiel Road as possible outside the safety zone of the golf hole. Totally removing Thiel Road from within the Hole 1 safety zone would necessitate an even greater encroachment into RFA.

Westerly portions of the fairway/rough associated with Hole 6 will encroach into the outer riparian zone of an RFA of an unnamed stream that flows from the central glen wetland complex into Pecks Brook. This area previously had been developed for golf purposes (Hole 8 fairway of the Greylock Glen Resort golf course), and presently supports an old field vegetative community with no canopy cover. Similar to the Hole 1 RFA encroachment, construction and maintenance of the fairway/rough at Hole 6 will be limited to grading, planting and turf maintenance/mowing following grow-in. This encroachment is necessary in order to maximize the safe distance of the fairway associated with Hole 2 from Gould Road and maintain as much of Gould Road as possible outside the safety zone of the golf hole. This RFA encroachment also is necessitated by the need for this portion of the site to accommodate three parallel golf holes. Similar to Hole 1, totally removing Gould Road from within the Hole 2 safety zone would necessitate the relocation of Holes 3 and 6 in a westerly direction, thereby resulting in an even greater encroachment into RFA.

With respect to Hole 7, two tees are proposed to be located within the outer riparian zone of an RFA associated with a tributary to Pecks Brook. These two tees will occupy an area previously developed as a golf green and rough in the Greylock Glen Resort golf course (see fairway #15 on Figure 3-3). Just west of these tees, a green and the southern end of rough and fairway associated with Hole #8 also will encroach into the RFA of the same unnamed tributary to Pecks



Plan of Previously Developed 18-hole Golf Course

Source:
Score card for Greylock Glen Resort Golf Course, circa 1975.
No Scale

Figure 3-3

Brook, again in an area which had been previously developed for golf purposes (fairway #14 of the Greylock Glen Resort golf course, see Figure 3-3). As with proposed Holes 1 and 6, construction and maintenance of the tees, green, and fairway/rough at these locations will be limited to grading, planting and turf maintenance/mowing following grow-in. In each instance, RFA encroachment was predicated on the need to relocate Holes #7, 8 and 9 to their present location in order to avoid adverse impacts to terrestrial habitat of the Jefferson salamander, a State-listed species of special concern. In addition, surface runoff from Hole #7 and #8 drains away from the unnamed tributary to Peck's Brook (see Figure 3-4).

The proposed driving range is to occupy an area formerly used for golf, and currently maintained in a mowed condition to allow similar uses. In fact, this area currently is actively used on an informal basis as a practice tee/driving range, as well as a general practice area. With the exception of a small area of sapling growth to remain undisturbed, the RFA associated with the proposed driving range along Pecks Brook already is cleared, as is the RFA immediately south of Gould Road where practice tees are proposed. Consequently, activities within RFA in conjunction with practice tee/driving range construction only are expected to include limited grade/elevation adjustments, planting and turf maintenance/mowing following grow-in.

All of the above-described encroachments into RFA are in locations which had previously been cleared, graded, and operated as a golf course. This is consistent with prior public comments on the Greylock Center project which encouraged re-use of the previously developed golf course where possible. In many instances, the former golf course now supports wetland communities that constitute constraints to the re-establishment of golf in these areas. In contrast, the above-referenced RFA encroachments do not affect wetland communities, and occur in areas requiring minimal vegetative disturbances. As indicated by the numerous iterations of the golf course, the golf course architects have continually sought to balance golf course quality, safety and playability while avoiding impacts to sensitive resources, and by minimizing unavoidable impacts. Given the present nature of the RFA in the five areas of golf course encroachment and the IPM protocols for maintenance of these areas, construction and operation of proposed golf facilities will not result in adverse affects to statutory RFA interests.

3.4.3 Connector Road

The proposed connector road is necessary to establish pedestrian, vehicular and safety access between the central and southern portions of the Greylock Center property. The provision of this access will require the crossing of Pecks Brook and, therefore, the RFA north and south of this waterway.



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1" = 100'-0"

Date: January 24, 2000

Golf Course Development Proposed Within RFA at Hole #7, 8

Figure 3-4

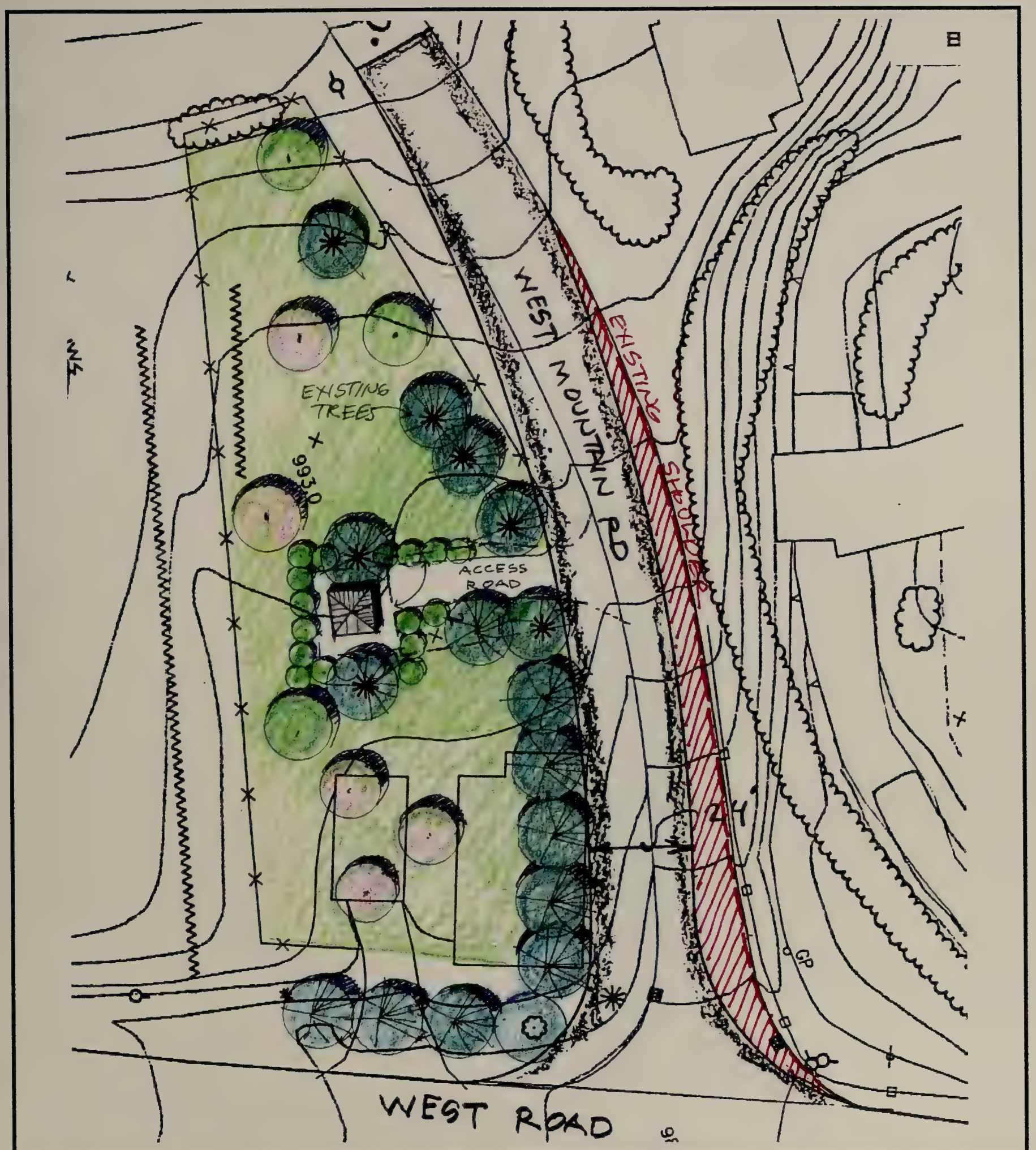
Numerous potential crossing locations were reviewed during the site planning process. However, as the FEIR Plan indicates, siting the connector road in a more easterly direction would result in even greater RFA and, potentially, wetland impacts. In contrast, the crossing has been located in an area which will require the least possible amount of vegetative clearing within RFA, as the proposed alignment generally coincides with an area previously cleared and maintained free of canopy for Hole 13 of the Greylock Glen Resort golf course (see Figure 3-3).

As stated above, the bridge over Pecks Brook will have a cross section of 30 feet to accommodate two-way travel (two 10-foot travel lanes, with two 1-foot shoulders) and to allow for pedestrian access via a 6-foot walkway along the west side of the bridge. The connector road, itself, portions of which will be located in the RFA, will have a cross section of 26 feet (two 10-foot travel lanes and two 3-foot gravel shoulders) Based on these dimensions, a total of 14,467 sf of RFA will be impacted by the connector road, including 6,698 sf and 7,769 sf within the outer and inner riparian zones, respectively (see Table 3-2). Detailed design is expected to be developed under a Public Works Economic Development (PWED) grant, an application for which is contained in Appendix D.

3.4.4 Infrastructure Improvements

From the West Road/West Mountain Road intersection to a point approximately 1,100 feet west along West Mountain Road, infrastructure improvements will be conducted within the Pecks Brook RFA. These improvements include the straightening of the eastern portion of West Mountain Road and, thus, the limited relocation of the roadway intersection in a southerly direction, as well as the extension/installation of utilities (e.g. sewer and water) along West Mountain Road to accommodate the development of Greylock Lodge and the Village. Figure 3-5 illustrates proposed modifications and infrastructure improvements to the intersection of West Road and West Mountain Road.

The area of RFA disturbance associated with these improvements will be determined in conjunction with final design activities. However, since the alignment of West Mountain Road will be relocated away from Pecks Brook and at least a portion of the area currently occupied by the roadway will become vegetated, both the distance of the roadway from Pecks Brook and the vegetated buffer between West Mountain Road and Pecks Brook will increase. As with all activities within wetland resource areas, as well as throughout the property, soil erosion and sediment controls will be implemented during construction. All controls, designed to preclude resource impacts, will be maintained in proper working order throughout the construction period and until issuance of a Certificate of Compliance by the Adams Conservation Commission.



GREYLOCK CENTER PROJECT

SCALE: 1"=30'-0"

Massachusetts Department of Environmental Management
DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

WEST MOUNTAIN ROAD ENTRY REALIGNMENT

Figure 3-5

—

4.0 STATE-LISTED SPECIES

4.1 Overview

As discussed in both the Draft Environmental Impact Report (DEIR) and the Notice of Project Change (NPC) for Greylock Center, the project site supports numerous state-listed species which are protected under the Massachusetts Endangered Species Act (MESA- 321 CMR 10.00). Site planning for the Greylock Center project has been conducted to avoid direct impacts to the habitats of these species; these avoidance measures have most recently resulted in the relocation of several golf holes and modifications to the alignment of several trail segments. DEM has consulted with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) on several occasions to review site plan changes which were warranted due to the proximity of rare species habitat.

As disclosed in the NPC, two additional state-listed species of special concern were discovered on Greylock Center property since the filing of the DEIR in the summer of 1998. Both of these species, Dwarf Scouring Rush (*Equisetum scirpoides*) and Jefferson salamander (*Ambystoma jeffersonianum*) are dependent upon wetland habitat. Accordingly, project-related activities in the vicinity of their wetland habitats will be subject to a Notice of Intent (NOI) review process in addition to MEPA. The NOI will likewise address measures to avoid impacts to Northern Spring Salamander and Appalachian Brook Crayfish, both of which are stream-dwelling species and listed as species of special concern by NHESP.

The following FEIR discussion focuses on site planning measures implemented to date, as well as proposed design measures to avoid impacts to state-listed species. These latter controls will be addressed in greater detail through the NOI process.

4.2 Jefferson Salamander

As disclosed in the NPC, field investigations performed by members of the Greylock Center design team led to the discovery of Jefferson salamander breeding activity in the northern portion of the large wetland complex in the central portion of the Greylock Center property. Specifically, three vernal pools, two of which have been certified by NHESP (CVP 1508 and CVP 1509), contained evidence of breeding of this state-listed species of special concern.

These findings were presented to the Natural Heritage and Endangered Species Program (NHESP) at a meeting held on 25 August 1999 at NHESP offices in Westborough, prior to submission of the NPC. In response, NHESP indicated

that the standard 'protection zone' associated with vernal pools containing other rare mole salamanders (e.g., blue-spotted and marbled salamanders) encompassed all land areas within a 300 meter (m) radius from the pool(s). NHESP further indicated that this same radius would apply to vernal pools containing Jefferson salamanders but that, depending upon the habitat types within the protection zone, certain activities may be allowed without the need to obtain a Conservation and Management Permit under MESA.

Accordingly, a Jefferson salamander habitat evaluation was conducted to document vegetative community types proximate to certified and other vernal pools in the northern portion of the central wetland area and, based upon this information, to identify preferred Jefferson Salamander terrestrial (i.e., adult stage, upland) habitat and provide recommendations with respect to future site planning/design activities.

4.2.1 Jefferson Salamander Habitat Survey Methodology and Findings

Field investigations to identify viable Jefferson salamander habitat were conducted from October 6–8, 1999 by Brian Butler of Oxbow Associates and Marshall Dennis of Wetlands & Wildlife, Inc. These investigations involved the mapping of upland vegetative community types (i.e. potential terrestrial habitat) proximate to certified and other vernal pools in the northern portion of the Glen on an acetate overlay to a 1″ = 400′ 1997 aerial photograph. Mapped upland community types included mature forest, successional forest, sapling forest, and successional and old field communities.

As indicated on Figure 4-1, mature forests primarily are located west of the subject vernal pools, both north and south of the Thunderbolt Trail, and include forest lands undisturbed by past clearing operations associated with downhill ski trail construction and/or other recent disturbances. With respect to the NPC site plan, mature forests occurred in conjunction with the locations of Hole 9 and the Rustic Cabins, and both snow-making and non snow-making trails. Only snow-making and non snow-making trails presently are proposed for this area. For the most part, canopy species ranging in diameter at breast height (dbh) from 8″-16″+ consist of sugar maple, beech, yellow birch, paper birch, black birch, red oak and red maple, with understory species including immature canopy species, as well as striped maple, flowering dogwood, barberry, Christmas fern and hay-scented fern, among others. Mature forest areas exhibit a relatively thick leaf litter/humus layer, and a well-developed system of subterranean mammalian (e.g. shrews, voles and moles) burrows, based upon direct observations resulting from turning over fallen trees and logs.

Successional forests occur immediately south of the mature forest and include at least portions of areas associated with past downhill ski trail construction. The

LEGEND

— · · —	Vegetation Community Boundary
Fm	Mature Forest
Fs	Successional Forest
SF	Sapling Forest
S/OF	Successional / Old Field
OF/S	Old Field / Successional
OW	Open Water



Wetlands



Golf Holes

CVP 

Certified Vernal Pool with J. Salamander



Other Vernal Pool with J. Salamander



Other Vernal Pool

GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

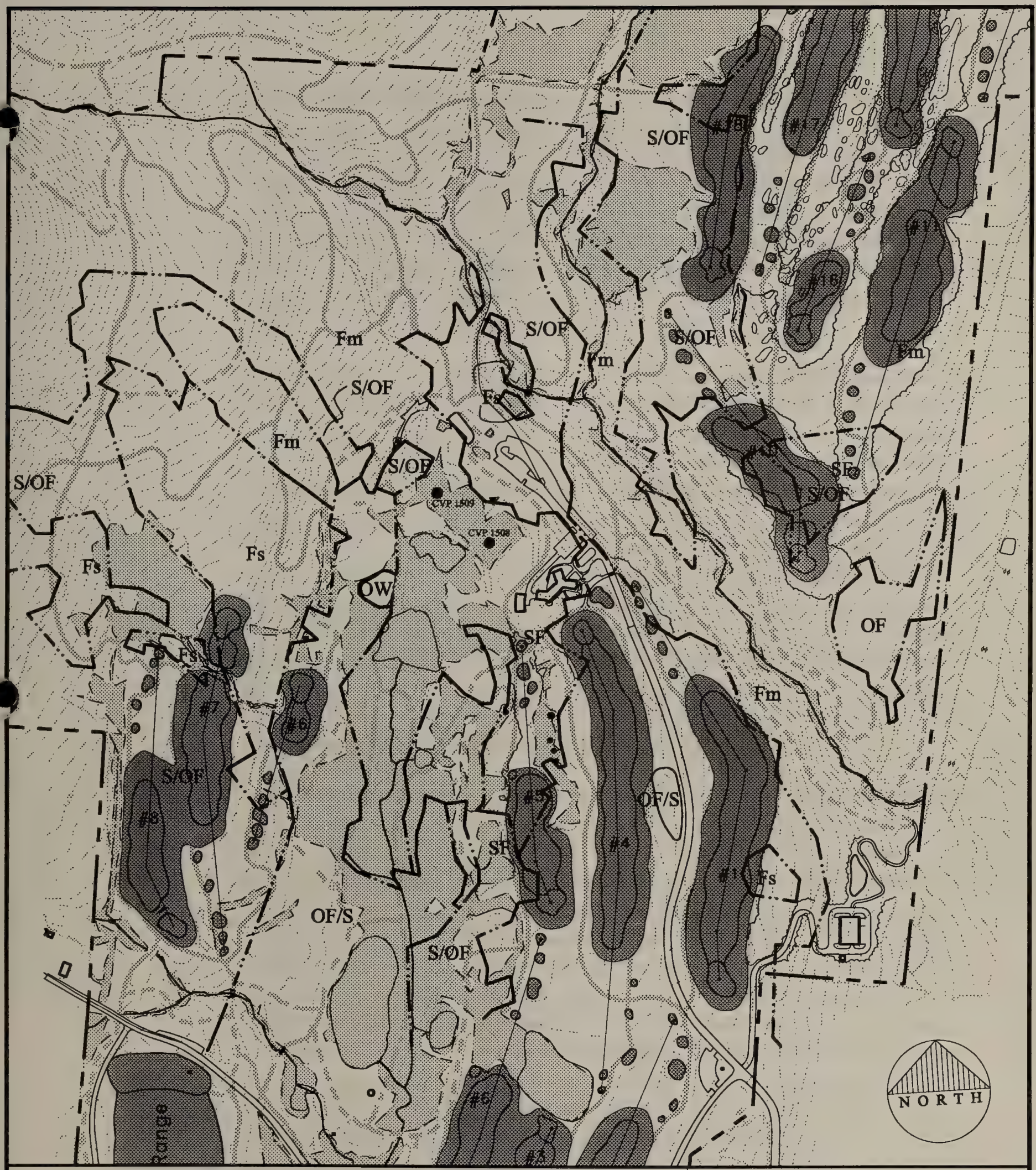
DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

Scale: 1" = 100'-0"

Date: January 24, 2000

Vegetation Community Boundaries Legend



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

Scale: 1" = 500'-0"

Date: January 24, 2000

Vegetation Community Boundaries Plan

Figure 4-1

M

green and portions of the fairway for Hole 8 as presented under the NPC site plan, as well as snow-making trails, were proposed for this area. Within the 300m protection zone, only snow-making trails are now proposed within successional forests. Although similar in plant species composition to mature forests and containing some mature individuals, the majority of trees within successional forested areas range in diameter at breast height (dbh) from 2″-6″. Due to the relatively young age of the forest, leaf litter/humus development is limited. The extent of fallen trees/logs and subterranean mammalian burrows also is noticeably reduced relative to mature forests.

Sapling forests are associated with the wetlands and immediately surrounding uplands in the central and northern portions of the Glen, as well as one location north of Hoxie Brook. South of Hoxie Brook, Hole 5 and both snow-making and non snow-making trails are proposed (both under the NPC site plan and the FEIR site plan). In sapling forests, the tree canopy is not well developed, with saplings extending only to approximately 25′ in height. Consequently, light penetration beneath the trees is more extensive than in successional or mature forests, allowing for the occurrence of varied shrub and herbaceous species. Throughout sapling forests, quaking aspen, paper birch, white ash and black cherry comprise the most abundant sapling species. Shrub and herbaceous plant species include honeysuckle, blackberry, raspberry, wild rose, barberry, goldenrod, wild madder, wild carrot, yarrow, milkweed, red clover and vetch, among others. In contrast to successional and mature forests, leaf litter/humus development and fallen trees/logs are effectively non-existent.

Although exhibiting many of the same plant species, the relative dominance of these species dictates classification as either a successional/old field or old field/succesional community. The former community type primarily is dominated by woody shrubs and saplings, while in the latter community, herbaceous plant species are most abundant. Regardless, representative species associated with each of these vegetative community types include staghorn sumac, Russian olive, silky dogwood, glossy buckthorn, paper birch, quaking aspen, black cherry, white ash, meadowsweet, milkweed, goldenrod, wild madder, angelica, wide-leaved plantain, ragweed, dandelion, tansy, wild carrot, New York aster, chicory, and black-eyed Susan. Similar to sapling forests, leaf litter/humus development and fallen trees/logs in successional and old field communities are effectively non-existent. In the vicinity of the central wetland complex, Hole 4 and snow-making and non snow-making trails occur in conjunction with these vegetative community types under both the NPC site plan and the FEIR site plan.

4.2.2 Discussion and Site Plan Modifications Resulting from Jefferson Salamander Habitat Survey

Life-history information regarding the Jefferson salamander indicates that terrestrial (*i.e.,* non-breeding) habitat for the Jefferson salamander consists of well-drained upland woodlands, particularly deciduous or mixed forests [NHESP fact sheet and *Massachusetts Wildlife* (Winter, 1994)]. In these areas, Jefferson salamanders may occur beneath leaf litter, loose soil and stones; in or beneath rotting logs; or in rock crevices and subterranean rodent burrows. As recently noted by DEMaynadier and Hunter [*J. Wildl. Mgt.* 63(2): 441-450] for spotted salamanders (*Ambystoma maculatum*) and wood frogs (*Rana sylvatica*), "Among natural populations, the abundance of juveniles and adults of both species declined sharply across a gradient from relatively mature forest-interior habitat (70-90 yr old) to recently clearcut habitat (2-11 yr old)". Given their documented preference for woodland habitat, this same finding may be anticipated with respect to Jefferson salamanders.

Accordingly, based upon the mapping of vegetative community types within the NHESP-prescribed 'protection' zone associated with vernal pools in which Jefferson salamander breeding activity was observed, primary terrestrial habitat for this species consists of the mature deciduous woodland located west of the vernal pools, up to and potentially above elevation 1,450' – 1,500' msl. Secondary Jefferson salamander terrestrial habitat consists of the successional forest located south of the mature woodland, generally to these same elevations. None of the other mapped vegetative community types are expected to constitute viable and/or productive Jefferson salamander terrestrial habitat. This includes the mature forest between Thiel Road and Hoxie Brook, located on a north-facing slope. As listed below, Jefferson salamanders are not expected to emigrate in the direction of this woodland or occur in this area during the non-breeding season due to:

1. The temperature-sensitive nature of Jefferson salamanders,

2. The cooler winter temperatures and the extended elapsed time for snowmelt and ground frost to occur on a forested slope with this directional aspect, and

3. The extended distance and presence of unfavorable/exposed habitat conditions between the breeding pools and the Thiel Road/Hoxie Brook forest, thus discouraging emigration in the forest's direction.

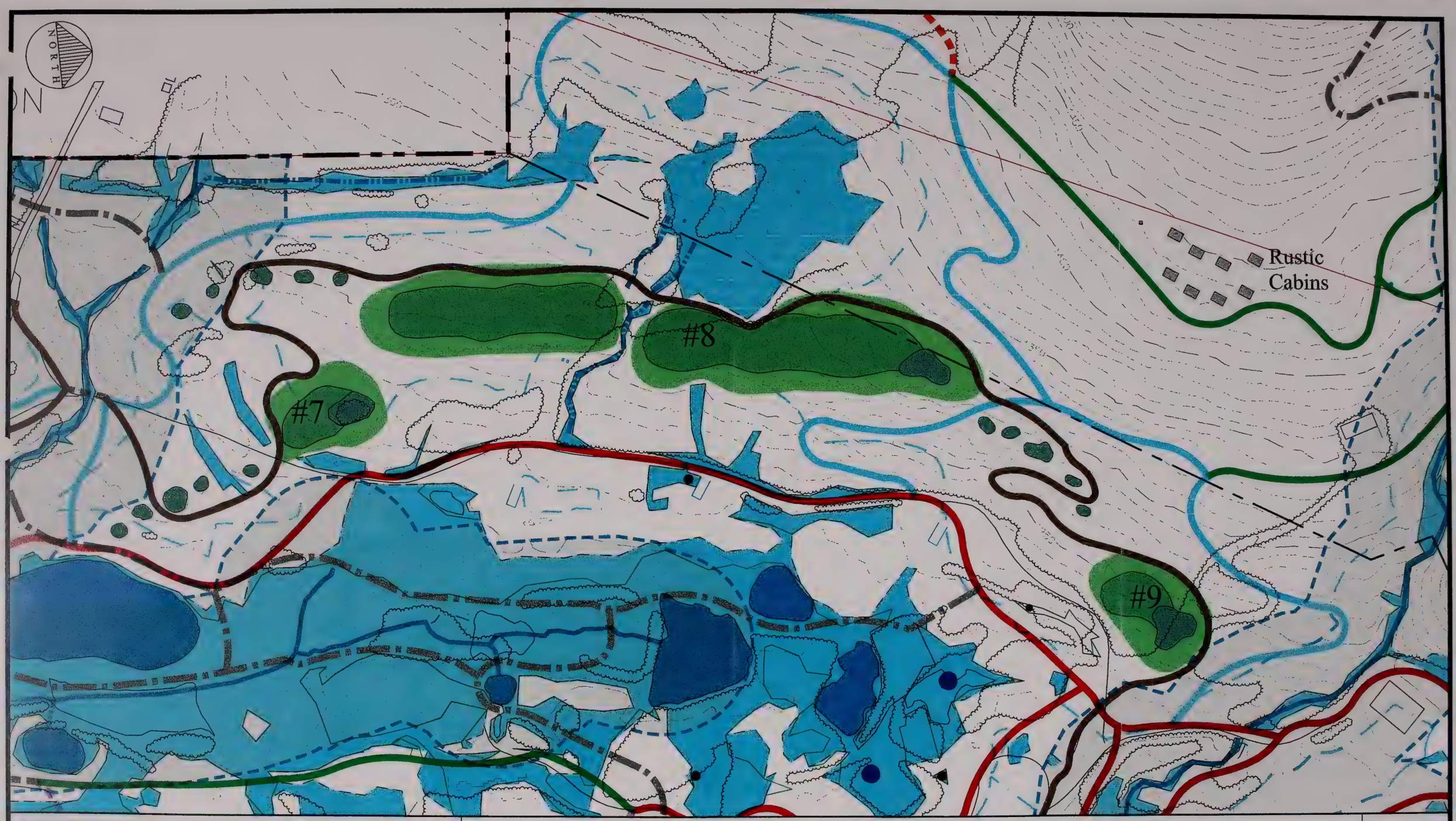
Under the NPC site plan (dated 31 August 1999), the entirety of Hole 9 had been associated with mature forest/primary Jefferson salamander terrestrial habitat, while the northern one-half of Hole 8 had been located within

successional forest/secondary Jefferson salamander terrestrial habitat. Additionally, each of these areas occurred within 300 m of vernal pools containing Jefferson salamanders. As stated above, both snow-making and non snow-making trails also occurred within primary and secondary Jefferson salamander habitat, with portions of these trails being located within 300 m of documented Jefferson salamander vernal pools, as well. Rustic cabins also were proposed within primary Jefferson salamander habitat. Each of the above-referenced features, as presented in the NPC, is shown on Figure 4-2.

Consequently, adjustments to the NPC site plan were made in response to the above findings. As shown on the FEIR Plan (Figure 1-1), the rustic cabins were relocated to the southern portion of the site. Hole 9 also was totally relocated to avoid displacement of primary and secondary Jefferson salamander terrestrial habitat. Relocating Hole 9, in turn, necessitated the relocation of Holes 7 and 8. While Hole 8 was relocated in a southerly direction closer to Pecks Brook, necessitating encroachment into RFA, this adjustment to the site plan further avoided impacts to Jefferson salamander terrestrial habitat. Current Hole 7, generally located within the area occupied by Hole 8 in the NPC site plan, also was moved in a southerly direction. Like current Hole 8, current Hole 7 also encroaches in the Pecks Brook RFA, albeit minimally. This encroachment, however, was necessary in order to avoid impacts to Jefferson salamander terrestrial habitat. The currently proposed location of golf holes 7, 8 and 9 is presented in Figure 4-3.

Based on the site plan modifications, none of the proposed golf course is located within primary Jefferson salamander terrestrial habitat. Moreover, only a limited portion of the Hole 8 fairway, rough and green is located within secondary Jefferson salamander terrestrial habitat, with these features to be located approximately 800' from vernal pools documented to contain Jefferson salamanders. In addition to the avoidance of terrestrial habitat, the relocation of golf facilities also allows for the unimpeded movement of Jefferson salamanders and other species between upslope terrestrial habitat and vernal pools. Neither snow-making nor non snow-making trails are expected to deter movements in this regard, particularly since the closest proposed trail (i.e. a snow-making trail) currently is a dirt road widely used by visitors to the Greylock Center property.

DEM met with NHESP on January 3, 2000 to present the findings of the field inventory of potential Jefferson salamander terrestrial habitat in the vicinity of the confirmed breeding pools, as well as the resultant changes to the site plan. Based on this meeting, NHESP indicated that the site plan, as presently proposed, appeared to avoid Jefferson salamander impacts and that further



GREYLOCK CENTER PROJECT

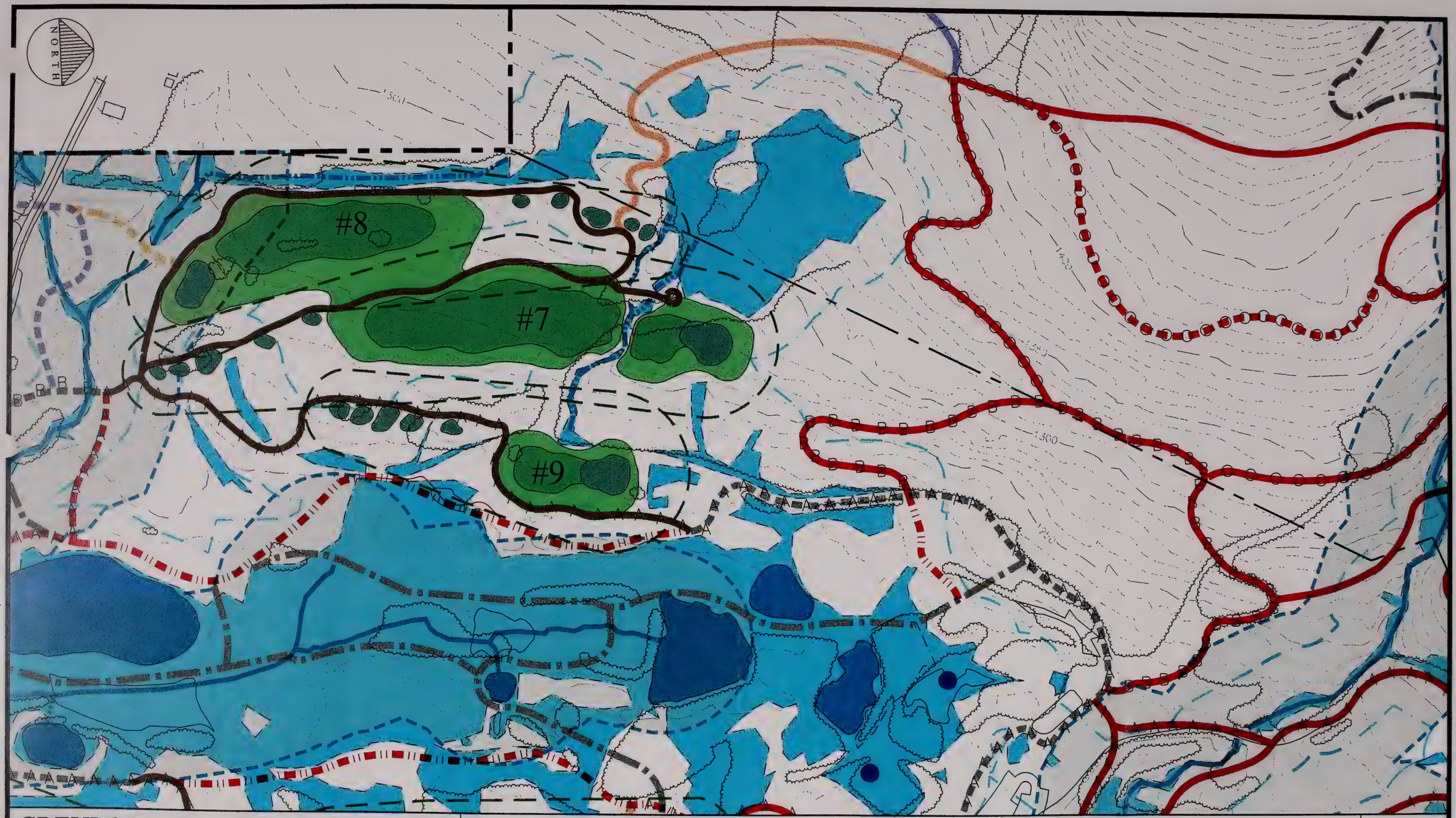
Massachusetts Department of Environmental Management
DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1" = 200'-0"
Date: January 24, 2000

Location of Fairways #7, 8 and 9 as Proposed in NPC
(Refer to FEIR Site
Plan for Legend)

Figure 4-2



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management
DEM Contract No. 066-00

Copley-Wolff Joint Venture

Scale: 1" = 200'-0"
Date: January 24, 2000

Modifications to Fairways #7,8 and 9 as Proposed under F.E.I.R. Site Plan
(Refer to FEIR Site Plan
for Legend)

Figure 4-3

documentation relative to Jefferson salamanders, including the initiation of a spring capture-release program, was not required. Consequently, the need for a Conservation and Management Permit from NHESP is not anticipated.

4.3 Spring Salamander and Appalachian Brook Crayfish

Both spring salamander (*Gyrinophilus porphyriticus*) and Appalachian brook crayfish *(Cambarus bartonii)* are considered to be widespread throughout the perennial streams on the Greylock Center property. Habitat for these two state-listed species of special concern is coincident with suitable habitat for native brook trout, and all three species require similar habitat conditions with respect to water quality, oxygenation and temperature stability (relatively cool in summer months, and relatively warm during the winter, as provided by groundwater-fed streams). Therefore, protecting habitat or habitat quality for one is likely to have a similar beneficial function for the other species, as well as the stream dwelling fauna in general.

The Greylock Center project has been designed to minimize direct and indirect impacts to perennial streams by reducing the number of stream crossings and avoiding RFA alterations to a large extent, as described in Section 3.0. The majority of impacts to RFA occur as a result of the multi-use trail system. No direct surface water impacts, however, will result from project implementation, as all waterway crossings will be bridged. RFA impacts as documented in this FEIR will continue to be refined in order to minimize the alteration of canopy cover within RFA through field adjustments to proposed trail alignments. The majority of trail surfaces will be pervious, with hardened surfaces introduced only in those areas where trails coincide with golf cart paths.

With respect to water quality, including water temperature, constituent concentration and thermal changes have the potential to impact aquatic species which rely upon streams or open water as their sole habitat, or which depend upon wetland resources to fulfill a portion of their life cycle requirements. In addition to potential development-related and golf facility runoff, concern also has been expressed regarding changes in water quality resulting from the use of municipal water supplies for irrigation, most notably by the MA Division of Fisheries and Wildlife (DFW) at a meeting held August 25, 1999. At this meeting, DFW emphasized the sensitivity of wild brook trout to trace levels of chlorine, a common disinfectant used in municipal water supplies. Since that meeting, however, it has been confirmed that the municipal water supply is not treated with chlorine, thereby precluding impacts in this regard.

Water temperature also is a critical habitat parameter for the spring salamander and Appalachian brook crayfish, as well as for wild brook trout and other aquatic species. As noted in the NPC, however, the Greylock Center project no

longer proposes onsite water withdrawal for either potable or non-potable uses. Consequently, there will be no impacts to water temperature resulting from the interception of ground water, which potentially could diminish groundwater discharges, base flows in streams and stream flushing, resulting in increased residence times for water in stream pools and increased water temperatures.

In regard to potential temperature increases due to the loss of tree canopy, the project largely avoids tree clearing within RFA, with the exception of select clearing to establish trail corridors and the connector road crossing. Outside these locations, RFA encroachments involve areas that are not presently canopied, or utilize existing trails where tree clearing for trail establishment already has occurred. Moreover, at wetland/stream crossings, the trail cross-section will be limited to a maximum of 16 feet, *i.e.*, the minimum necessary to accommodate trail maintenance and snow grooming equipment for a two-way nordic trail. Additionally, while selective vegetative clearing will result in a temporary loss of canopy at some locations, in time, adjacent vegetation will spread over the trail corridor, thereby replacing initial losses of vegetative cover. Regardless, final design and field adjustments thereto, will seek to further avoid/minimize losses of tree canopy and limit tree-cutting to only the extent necessary to establish the footprint of the trail, itself.

Besides the above and, as described in Sections 5.0 and 6.0, a variety of additional measures directed at the maintenance of water quality will be implemented as integral components of the Greylock Center project. These measures will be directed at both facility construction and operation. During construction, soil erosion/sediment controls and a Stormwater Pollution Prevention Plan will be implemented to avoid/minimize aquatic resource impacts. Operational measures in this regard include the implementation of stormwater Best Management Practices (e.g. street sweeping, deep sump and hooded catch basins, water quality/vegetated swales and extended detention/wet ponds) and overall compliance with the MA Department of Environmental Protection Stormwater Management Policy and Standards, as well as compliance with the Integrated Pest Management (IPM) program for the golf course and practice tee/driving range, and Greylock Center Stewardship Plan.

These latter two documents also require the monitoring of baseline surface water quality onsite, and subsequent monitoring during facility construction/operation. This monitoring effort, to occur at the site boundaries down-gradient from proposed construction/development activities at three locations, will be conducted quarterly for a period of five (5) years following the completion of Phase I construction. Subsequent to the 5-year monitoring

program, its further implementation will be re-evaluated based upon the collective water quality database and the anticipated schedule for Phase II implementation.

Parameters to be evaluated at the two locations down-gradient of the golf course, club house, relocated Thiel Road and the connector road will include Class B surface water quality criteria consisting of temperature, pH, dissolved oxygen, and fecal coliform bacteria, as well as total suspended solids (TSS), sodium, chloride, nitrate nitrogen and total phosphorus. A hydrocarbon scan for gas & oil based constituents, as well as a herbicide/pesticide scan, also will be conducted. In addition to providing comparative data relative to applicable surface water quality standards, the data obtained from this monitoring program will assist in documenting impacts associated with roadway runoff, including deicing compounds, and runoff-related impacts associated with golf course operation/maintenance.

With one exception, these same parameters also will be evaluated at the one monitoring location down-gradient of proposed development along West Mountain Road. Since no golf-related facilities are associated with development activities in this portion of the site, the herbicide/pesticide scan will not be conducted. In the event the results of any single monitoring event are determined to exceed the acceptable range of background conditions, to be established prior to construction, efforts will be initiated to isolate the action(s) causing the exceedance, including more site-specific monitoring, and to determine the most appropriate corrective response.

In light of the above, implementation of the Greylock Center project is not expected to result in either short- or long-term adverse effects to the spring salamander or Appalachian brook crayfish.

4.4 State-listed Plant Species

The 1,063 acre Greylock Center site supports several rare plants species (i.e. endangered/threatened species and species of special concern), many of which are associated with the extensive wetland resources on the property. Some, however, are associated with upland forest communities. Each successive iteration of the site plan has required reconsideration of rare plant species locations, and several of the trail alignments have been repeatedly modified in an effort to maintain a distance of at least 200 feet between any development activity and a state-listed plant species location, as requested by NHESP.

The primary threats to state-listed plant species resulting from the Greylock Center project are increased human access to rare plant locations and habitat modifications. Increased access, for example, may result in plant collection, or

losses due to inadvertent trampling. Changes to habitat requirements may result from increased sunlight (e.g., canopy removal), or modification to surface drainage patterns and water quality, among others.

Maintenance of a 200 foot buffer will largely curtail the potential for impacts to state-listed plant species. Except in two locations, this buffer has been maintained. One of these locations involves the connector road, while the other involves the alignment of a combined trail/golf cart path.

In the instance of the connector road, access to the rare plant location will not be increased, as the roadway and pedestrian path accommodated by the bridge structure will be effectively removed from the plant location by virtue of the bridge's elevation above adjacent lands. While construction of the bridge will involve changes in the canopy cover, this will not adversely affect the subject species, due to its location up-gradient from the connector road. This up-gradient location also will preclude impacts associated with potential changes to drainage patterns and water quality.

With respect to the combined trail/golf cart path, no disturbance will occur within approximately 100' of the State-listed plant's location. However, to ensure impact avoidance during construction, the individual plant population will be identified and fenced prior to the initiation of construction activities to prevent encroachment by construction equipment and personnel. Additionally, soil erosion and sediment controls will be installed and maintained throughout the construction period at this location. Consequently, the Greylock Center project is not anticipated to result in either short- or long-term adverse impacts to this State-listed plant species.

5.0 STORMWATER MANAGEMENT

5.1 Overview

The following discussion of stormwater management relative to the proposed Greylock Center project was adopted from a report prepared by Fay, Spofford & Thorndike, Inc., engineering consultant to the final design team.

As described below, proposed project elements were evaluated and stormwater management procedures identified to address this key issue. Although development will be constructed in phases, stormwater management has been assessed for the full-build condition. Components of the Greylock Center project evaluated relative to stormwater management include:

- Golf Course
- Golf Clubhouse
- Golf Maintenance Facility
- Greylock Village, Phase I
- Greylock Village, Phase II
- Greylock Lodge
- Connector Road
- West Mountain Road/West Road Intersection

Each of these project components has been evaluated in terms of its need for stormwater management and the types of controls required to meet the requirements of the Massachusetts Department of Environmental Protection (DEP) *Stormwater Management Policy*. Specifically, in accordance with the DEP *Policy*, the following nine stormwater management standards were addressed:

1. No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.
2. Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.
3. Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post-development site should approximate the annual recharge from the pre-development or existing site conditions, based on soil types.

4. For new development, stormwater management systems must be designed to remove 80% of the average annual load (post-development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when:

    - Suitable nonstructural practices for source control and pollution prevention are implemented;
    - Stormwater Best Management Practices (BMPs) are sized to capture the prescribed runoff volume; and
    - Stormwater management BMPs are maintained as designed.

5. Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs. The use of infiltration practices without pretreatment is prohibited.

6. Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas. Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold water fisheries and recharge areas for public water supplies.

7. Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the Standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.

8. Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

9. All stormwater management systems must have an Operation and Maintenance Plan to ensure that systems function as designed.

5.1.1 Approach

As noted above, the Greylock Center development was divided into separate project components for the purpose of evaluating stormwater impacts resulting from development, and was based on a schematic (10%) level of design. DEP standards 1, 5, 6, 7, 8 and 9 do not require calculations. Consequently, the evaluation of these standards was based on the performance of the proposed project components. The following methods were used to address Standards 2, 3 and 4:

Post-Development Peak Discharge Rates (Standard 2)

To mitigate impacts to the existing site drainage characteristics caused by the Greylock Center development, stormwater attenuation ponds are proposed. The preliminary pond size and locations are based on the Schematic Site Development Plans and on preliminary hydraulic calculations. The Soil Conservation Service (SCS) methods were used for all hydraulic calculations in this analysis. Watershed hydrographs were generated, and the routing of the hydrographs through the drainage system and stormwater attenuation ponds was accomplished using HydroCAD, a third party software package based on the SCS TR-20 Computer Program. It is recognized that the pre- and post-development drainage areas may not be precisely the same as shown on the peak runoff tables. The approximate size and location of the stormwater ponds are based on simulating the existing peak stormwater flows. The drainage analysis addresses major site impacts resulting from the proposed development. A refined analysis will be performed addressing all drainage related impacts during the final design.

Recharge to Groundwater (Standard 3)

For each project component, a calculation of proposed impervious areas has been performed based on the schematic design plans. Existing soil types have been identified from previous studies conducted at the site by others, and each soil type has been assigned to a hydrologic soils group in accordance with data prepared by the U.S. Natural Resources Conservation Service (NRCS), formerly the U.S. Soils Conservation Service. The required volume of stormwater recharge in accordance with the DEP *Stormwater Management Policy* has been calculated, and the means of achieving the required recharge into the ground has been developed.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

To meet *Stormwater Management Policy* Standard 4, stormwater treatment systems have been proposed to remove 80% of the annual load of TSS for the major site components. The methods of calculating removal rates for the BMPs recommended are as described in the *Stormwater Management Handbook, Volume Two*, prepared by the Massachusetts Department of Environmental Protection and the Massachusetts Office of Coastal Zone Management, dated March 1997.

5.1.2 U.S. Natural Resources Conservation Service (NRCS) Soils Classifications

Figure 5-1 presents a delineation of soil types for the project site based on data published by the NRCS. The NRCS classifies soils into four hydrologic groups, A through D. Group A soils are very sandy or gravelly with good percolation rates and low runoff potential, while Group D soils are clays with poor percolation rates and high runoff potential. A summary of site soil types, with map symbol, hydrologic group and soil name, is presented on Table 5-1.

5.2 Site Analysis

The following discussion describes the manner in which proposed project components will be designed to meet the *Stormwater Management Policy* Standards. Standards 1 through 4 are presented in detail for each of the specific project elements. Standards 5 through 9 have been addressed on a project-wide basis in Section 5.2.9.

5.2.1 Golf Course

As shown on the Figure 5-1 (Site Development Plan), construction of the golf course will involve modifications to over 150 acres. The driving range south of Gould Road is located on a portion of the former golf course, and is adjunct to Peck's Brook. Nine holes are located in the area surrounding the Glen, and nine are north of Hoxie Brook. To accommodate the layout of Hole Nos. 1 and 4, Thiel Road will be realigned from approximately 300 feet north of Gould Road to its terminus. Current land use consists of meadows, wetland and some wooded areas.

Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

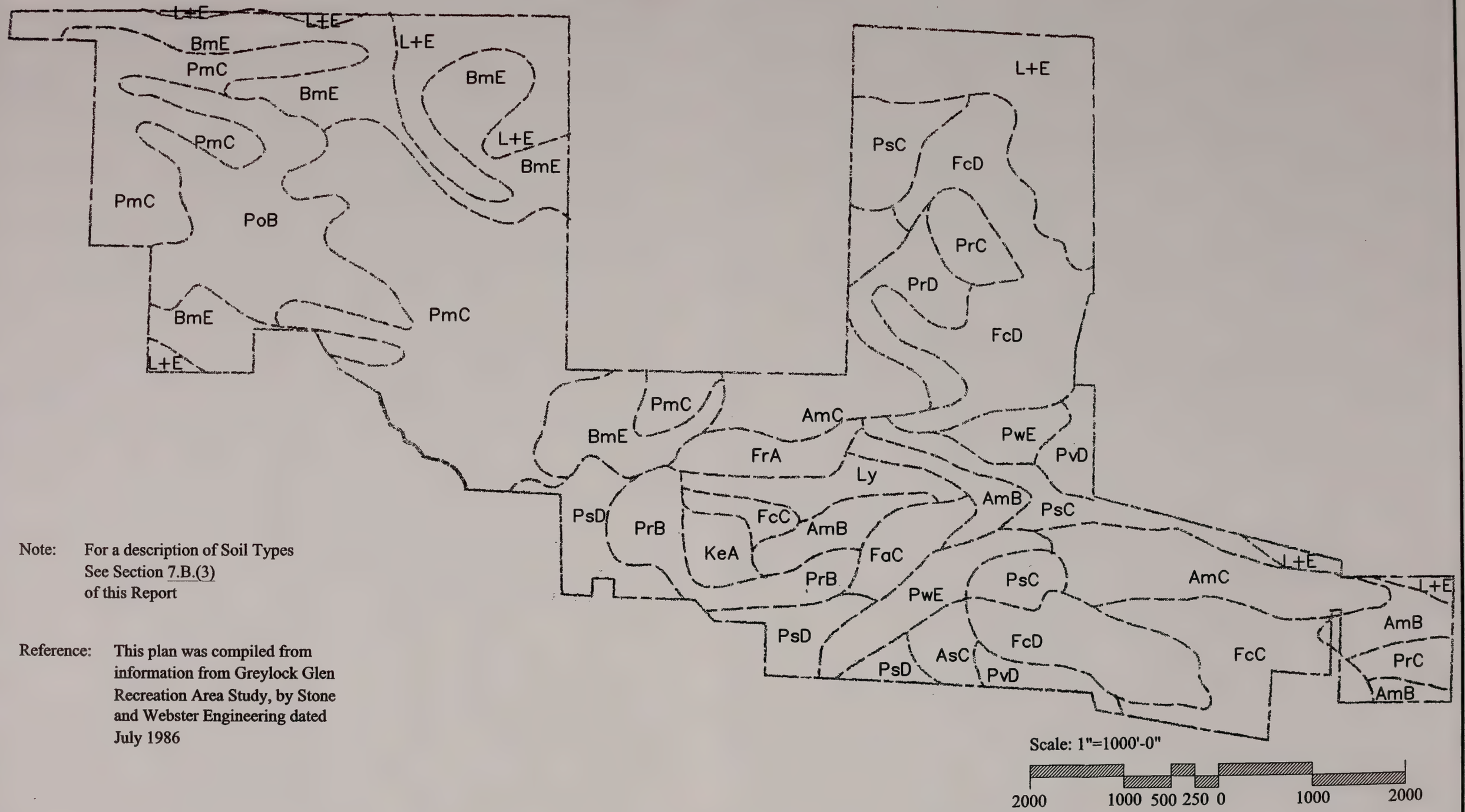
Grading of the golf course will cause flatter slopes than currently exist. The proposed relocation of Thiel Road, and increases in impervious areas resulting from construction of the golf clubhouse and roadways, will require modifications to existing drainage characteristics. Therefore, the drainage system between Hole No. 4 and Thiel Road will be designed to meet the requirements of DEP's *Stormwater Management Policy* Standards 2 through 9, as set forth below and in Section 5.2.2.

Table 5-1 Summary of Soil Types

Map Symbol	Hydrologic Group	Soil Name
AmB, AmC	B	Amenia Silt Loam
AsC	B	Amenia Silt Loam, Very Stony
BmE	B/C	Berkshire-Marlow Assn., Steep (55% Berkshire Soils, 30% Marlow Soils, 10% Other Soils)
CuC	B	Copake-Urbanland Complex
FaC, FaD	C/D	Farmington-Rock Outcrop Complex
FrA	C	Fredon Fine Sandy Loam
KeA	C	Kendaia Silt Loam
LtE	C/D	Lyman-Tunbridge Assn. (45% Lyman Soils, 45% Tunbridge Soils, 10% Other Soils)
Ly	C/D	Lyman Mucky Silt Loam
PmC	C	Peru-Marlow Assn., Extremely Stony (60% Peru Soils, 20% Marlow Soils, 20% Other Soils)
PoB	C	Pillsbury Silt Loam
PrB, PrC, PrD	B	Pittsfield Loam
PsB, PsC, PsD	B	Pittsfield Loam, Very Stony
PvD	B	Pittsfield Loam, Extremely Stony
PwE	B	Pittsfield and Nellis, Very Stony
TuC	C/D	Tunbridge-Lyman Assn. (50% Tunbridge Soils, 25% Lyman Soils, with Rock Outcrop)

Post-Development Peak Discharge Rates (Standard 2)

In general, stormwater drainage characteristics will not significantly change as a result of the golf course construction. The proposed construction will require localized regrading of the existing site topography to provide slopes more desirable for tee areas, fairways, roughs, greens and bunkers; however, the general topography of the golf course will follow the topography of the existing land area. At locations where grading is required, existing steeper slopes will be lessened to create flatter surfaces for the golf course. The flatter slopes, in conjunction with the well established turf of the golf course, will reduce the peak rates and volumes of stormwater runoff from the golf course area as a whole.



Note: For a description of Soil Types See Section 7.B.(3) of this Report

Reference: This plan was compiled from information from Greylock Glen Recreation Area Study, by Stone and Webster Engineering dated July 1986

Greylock Center Project Adams, Massachusetts

Department of Environmental Management
Greylock Management Associates

by Fay Spofford & Thorndike, Inc.

Soils Map

January 28, 2000

FIGURE 5-1

Recharge to Groundwater (Standard 3)

The development of the golf course is not expected to impact groundwater recharge. The golf course construction will occur throughout the northeastern portion of the project site, with Hole Nos. 1 through 9 constructed south of Hoxie Brook and Hole Nos. 10 through 18 constructed north of Hoxie Brook. Soil types south of Hoxie Brook are predominantly hydrologic Group B soils, with some areas consisting of hydrologic Group C or C/D soils. The soils north of the Hoxie Brook are predominantly hydrologic Group C/D soils within the limits of the golf course, and hydrologic Group B soils surrounding the extremities of the golf course layout.

Impervious areas associated with the golf course construction, excluding the club house and maintenance facility, include an 8-foot wide cart path traversing the course from hole to hole along one side of each fairway. The total length of cart path for Hole Nos. 1 through 9 is estimated to be approximately 17,050 linear feet, with approximately 75 percent of the length being over hydrologic Group B soils. The length of cart path for Hole Nos. 10 through 18, inclusive of the path to and from the club house and maintenance facility, is estimated to be 17,350 linear feet, with approximately 40 percent of the length being over hydrologic Group B soils. Based upon recommended infiltration rates established by DEP's *Stormwater Management Policy* for impervious areas constructed over defined hydrologic soil groups, the required infiltration volume is computed to be 2,360 cubic feet for Hole Nos. 1 through 9, and 1,505 cubic feet for Hole Nos. 10 through 18. Such volumes will be naturally recharged to groundwater due to the following:

- Regrading of steep slope areas to flatter slopes for golf course use will reduce runoff and enhance infiltration,
- Establishment of well maintained turf within the play areas of the golf course will reduce runoff and enhance infiltration,
- The placement of free draining soils and the installation of underdrains within the greens area of the golf course will contribute to groundwater recharge,
- The construction of localized depressions inclusive of fairway traps, bunkers and drainage swales will collect surface runoff and contribute to infiltration and groundwater recharge, and
- The use of an off-site water supply for golf course irrigation will provide supplemental base flow to the golf course area.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

The golf course will consist predominantly of maintained turf areas. Total suspended solids within stormwater runoff from the golf course area will be minimal due to the filtering characteristics of the grass. Prior to establishment of the grass, hay bales, silt fence, check dams, and temporary sediment basins will be used to control erosion and sedimentation.

5.2.2 Golf Clubhouse

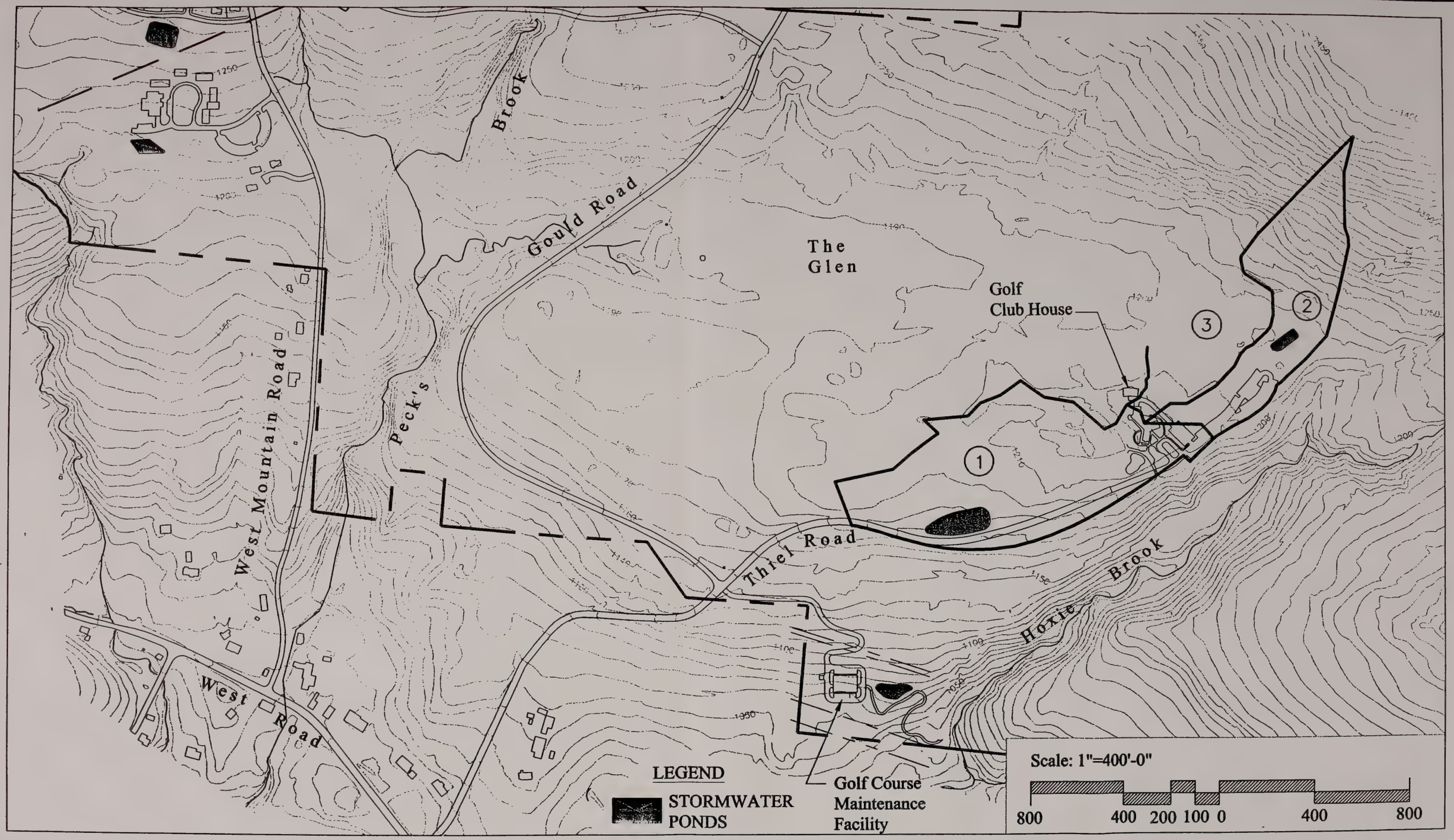
The golf clubhouse proposed to be located on a knoll west of Thiel Road will service golfers, hikers, and cross country skiers, and will be used for visitor services and offices. The parking areas will be paved with bituminous concrete on the travel way and will be paved with an open cell reinforcement system of pavers planted with grass seed on the parking stalls. As shown on Figure 5-2 (Drainage Delineation Plan), stormwater runoff from the clubhouse and parking area is tributary to four separate drainage basins.

Area 1 includes more than 50 percent of the clubhouse roof areas, the looped drop-off road, the cart path and portions of the parking areas adjacent to Thiel Road. Stormwater runoff within Area 1 will flow generally southerly toward existing twin 24-inch culverts located below Thiel Road approximately 1,000 feet south of the clubhouse site. Area 2 contributes stormwater runoff northerly toward an existing 24-inch culvert below Thiel Road approximately 600 feet north of the clubhouse site. Portions of the clubhouse roof area, the access drive to the rear of the clubhouse, and nearly all of the overflow parking areas north of the clubhouse site will contribute stormwater runoff to this area. Area 3 generally drains northward toward the location of a certified vernal pool. A small portion of the rear access drive embankment will contribute stormwater runoff toward the vernal pool upon project completion. Area 4 contributes stormwater runoff westerly toward the Glen. Only the rear portion of the cart storage building roof area will flow toward Area 4 upon project completion.

Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

New outfalls are anticipated at the golf clubhouse. Therefore, drainage improvements will be designed to meet the requirements of DEP's *Stormwater Management Policy* Standards 2 through 9, as set forth below.



Greylock Center Project Adams, Massachusetts

Department of Environmental Management
Greylock Management Associates

by Fay Spofford & Thorndike, Inc.

Drainage Area Delineation Plan
Club House & Maintenance Facility

January 28, 2000

FIGURE 5-2

NORTH

Post-Development Peak Discharge Rates (Standard 2)

Of the four drainage basins impacted by construction of the clubhouse and the relocation of Thiel Road, Area 1 and Area 2 have been impacted the most. The point of analysis for Area 1 is coincident with the location of the twin 24-inch culverts crossing Thiel Road south of the golf clubhouse site. To compare the runoff generated by the existing conditions, post-development conditions without attenuation, and post-development conditions with attenuation, an analysis of the 2-year, 10-year and 100-year storm events was performed. A summary of the analysis for Area 1 is provided in Table 5-2.

Within drainage Area 2, the location of the proposed stormwater pond was used as the point of analysis to compare the runoff generated by the existing and post-development conditions. A summary of the analysis for existing and post-development conditions for the 2-year, 10-year and 100-year storm events is presented in Table 5-3.

Table 5-2 Drainage Area 1 Runoff Characteristics - Clubhouse

	Drainage Area (Acres)	Runoff Curve Number	Time of Concen-tration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	12.54	69	10.2	5.67	17.30	35.15	0	0	0
Post-Development without Attenuation	12.54	71	10.2	7.34	20.44	40.06	0	0	0
Post-Development with Attenuation	13.53	71	10.2	5.04	17.21	34.38	0.11	0.20	0.29

Recharge to Groundwater (Standard 3)

The golf clubhouse site, inclusive of roofs, patios, walkways, roadways and cart path areas, lies entirely on hydrologic Group C/D soils. Groundwater recharge by way of infiltration of stormwater runoff will be minimal. In accordance with the requirements of DEP's *Stormwater Management Policy*, 0.1 inches of recharge from proposed impervious areas will be provided for hydrologic Group C soils and zero recharge is required for hydrologic Group D soils. The total

amount of impervious area proposed at the clubhouse site, not including Thiel Road (i.e., existing conditions pavement) is shown to be 35,400 square feet, or 0.8 acres. This area includes roofs, decks, patios, walkways, cart paths and access drives. The amount of impervious roadway area through the proposed parking area north of the clubhouse site is 39,600 square feet, or 0.91 acres, based on a proposed 24-foot width of roadway pavement.

Table 5-3 Drainage Area 2 Runoff Characteristics - Clubhouse

	Drainage Area (Acres)	Runoff Curve Number	Time of Concentration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	7.05	63	17.0	1.26	5.65	13.15	0	0	0
Post-Development without Attenuation	7.11	65	17.0	1.67	6.52	14.44	0	0	0
Post-Development with Attenuation	7.11	65	17.0	1.05	4.93	11.85	0.04	0.11	0.18

To minimize increased stormwater runoff rates and to create a means of replicating existing recharge conditions within the proposed parking lot areas, all parking surfaces will be constructed of an open cell reinforcement system of pavers planted with grass seed. Additional stormwater recharge will occur along the proposed vegetated swale to be constructed along the west side of the relocated Thiel Road, and within the bottoms of two stormwater detention ponds. One pond will be located adjacent to Thiel Road in the vicinity of the twin 24-inch culverts south of the clubhouse, and the second pond will be located north of the single 24-inch culvert below Thiel Road, north of the clubhouse. Where conditions are found to be favorable in the vicinity of the clubhouse building, recommendation is made to discharge stormwater from the roof areas to dry wells and/or leaching pits. Two 6-foot diameter, 3-foot deep leaching pit structures installed to collect roof runoff from the clubhouse will provide a volume in excess of the recharge volume required by DEP's *Stormwater Management Policy* for the clubhouse site.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

Area 1 - Golf Club House (to Thiel Road): To achieve the required TSS removal, the developer will be required to implement a street sweeping program for all paved areas, including walkways.

All roadways will be constructed with catch basins containing hoods and deep sumps. Runoff from the closed drainage system will discharge to a vegetated swale along relocated Thiel Road. Check dams will be used within the swale to reduce velocities and settle out suspended solids. An extended detention pond or a wet pond will be constructed at the terminus of the proposed stormwater treatment train. The pond will be designed to capture and store the first one-inch of rainfall from all roads, paved areas and walkways draining to it. It is estimated the depth required will be approximately 5 inches, based on 35,000 square feet of impervious area and a 7,000 square foot pond.

Area 2 - Catchment North of Parking Area: Catch basins with hoods and deep sumps will be used in the parking areas. Runoff from the catch basin will discharge to a vegetated swale with check dams. The swale located west of the parking area will flow to an extended detention pond or a wet pond located north of the existing 24-inch culvert below Thiel Road, north of the parking lot. The pond will be designed to capture and store one-inch of rainfall from the roads, walkway and cart path areas flowing to it. It is estimated the depth will be 13 inches based on a 3,000 square foot pond size.

Area 3 - Catchment North toward Vernal Pool: A closed drainage system consisting of catch basins with hoods and deep sumps will be used in the access drive to catch stormwater runoff. The runoff will then flow to a drainage channel with check dams, then to a third party proprietary treatment system such as Stormtreat, Vortechnics, Downstream Defender, or Stormceptor. This treatment train, plus pavement sweeping which will be a part of the maintenance program, will remove more than 80% of the TSS within the stormwater runoff.

5.2.3 Golf Maintenance Facility

The proposed location of the golf maintenance facility is east of Hole No. 1 and south of Hoxie Brook. Access to the proposed facility will be by way of a 20-foot wide, bituminous paved drive originating at the intersection of Gould Road and Thiel Road. The proposed drive will traverse across the existing steep slope from south to north, then turn generally northeast and downward to the building site. The existing topography across the site slopes steeply from west to east having maximum slopes in excess of 20 percent.

The proposed golf maintenance facility will consist of two buildings. The primary maintenance building will be a single story structure measuring 70' by 100' centered within the site's footprint. A separate 20' by 20' building will be constructed south of the primary building for fertilizer storage. The bituminous paved access drive and bituminous paved parking areas will surround the primary building. Access to the cart path adjacent to Hole No. 10 will be provided from the golf maintenance facility toward the north via a bituminous paved path.

The building site is bordered on the west by an existing gas line easement and on the east by an existing electric easement. The project's southerly property limit passes through the electric easement just east of the golf maintenance facility. Existing soils at the proposed golf maintenance facility site, and below the proposed access drive, are entirely within hydrologic Group B.

Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

It is anticipated that construction of the access drive, buildings and parking facilities will cause changes to the site drainage characteristics and possibly a new outfall downgrade of the facility. Therefore, a drainage system for the maintenance facility and access drive will be designed to meet the requirements of DEP's *Stormwater Management Policy* Standards 2 through 9, as set forth below.

Post-Development Peak Discharge Rates (Standard 2)

All land areas associated with the proposed golf maintenance facility are tributary to Hoxie Brook via overland flow. For the purpose of analysis, the access drives, building footprint areas and parking facilities are assumed to be tributary to a common point located north of the primary building. At this point of analysis, the proposed land alterations include the conversion of approximately 1.05 acres of open space and woodland to 1.05 acres of impervious surface. To attenuate increased peak discharge rates from the proposed impervious areas, and to provide stormwater treatment and some infiltration capability, a stormwater detention pond having a usable storage volume of at least 0.25 acre-feet will be constructed to the north of the golf maintenance facility. The results of the analysis for existing and proposed conditions for the 2-year, 10-year and 100-year storm events are provided in Table 5-4.

Table 5-4 Drainage Area 2 Runoff Characteristics – Golf Maintenance Facility

	Drainage Area (Acres)	Runoff Curve Number	Time of Concentration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	1.15	60	14.6	0.13	0.76	1.93	0	0	0
Post-Development without Attenuation	1.15	95	4.2	2.84	4.56	6.72	0	0	0
Post-Development with Attenuation	1.15	95	4.2	0.13	0.66	1.97	0.14	0.18	0.23

Recharge to Groundwater (Standard 3)

In accordance with the requirements of DEP's *Stormwater Management Policy*, 0.25 inches of runoff from proposed impervious areas will be recharged to groundwater via infiltration. Based on 1.05 acres of proposed impervious area, the required recharge volume is calculated to be 953 cubic feet. Four 6-foot diameter, 3 foot deep leaching pits, one at each corner of the maintenance building, will be installed to collect and infiltrate runoff from the roof area. This will meet the requirements of the policy.

Additional groundwater recharge will be achieved through the use of vegetated swales constructed along the edge of the proposed access drive where the drive passes across the slope of the existing terrain. Check dams, level spreaders, cross culverts and underdrain systems installed along the upper portion of the access drive will also allow additional opportunity for groundwater recharge. Along the downgradient edge of the parking area, vegetated swales, check dams and level spreaders will be effective in removing suspended solids from the stormwater runoff, as well as contributing to recharge. Lastly, the bottom of the proposed detention pond will provide some recharge capability.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

As a part of the total project development, street sweeping will be the first means of removing suspended solids from stormwater runoff. Routine street sweeping will occur along the maintenance facility access drive and on all

pavement areas surrounding the building. Where catch basins are provided to collect stormwater runoff from the access drive and other pavement areas, hoods and deep sumps will be provided. Vegetated swales, check dams, level spreaders and the proposed detention pond will also be effective in removing suspended solids from the stormwater runoff to meet the required 80% minimum removal.

Land Uses with Higher Potential Pollution Loads (Standard 5)

The golf maintenance facility's access drive will not normally yield high potential pollution loads. However, the maintenance facility and fertilizer storage building could. The maintenance facility will be equipped with floor drains that are piped to grease traps. Effluent from the grease traps will discharge to the building's sanitary sewer. The storm drainage system for the parking area will be designed to flow to the stormwater treatment train described above with respect to TSS removal.

5.2.4 Greylock Village – Phase I

The first phase of Greylock Village construction will include an inn, institute building and up to 50 units of single family, duplex, and multi-family housing units. As shown in Figure 5-3, Phase I is proposed downgradient of the proposed connector road and to the south of West Mountain Road for approximately 1,000 feet. The site is primarily wooded and slopes to the east at about 8½ percent. Existing stormwater runoff at the upper reaches of this area flows toward West Mountain Road and is carried to a wetland on the north side of West Mountain Road through a series of culverts. Runoff from the lower reach of this area travels easterly behind existing dwellings on West Mountain Road to an existing wetland.

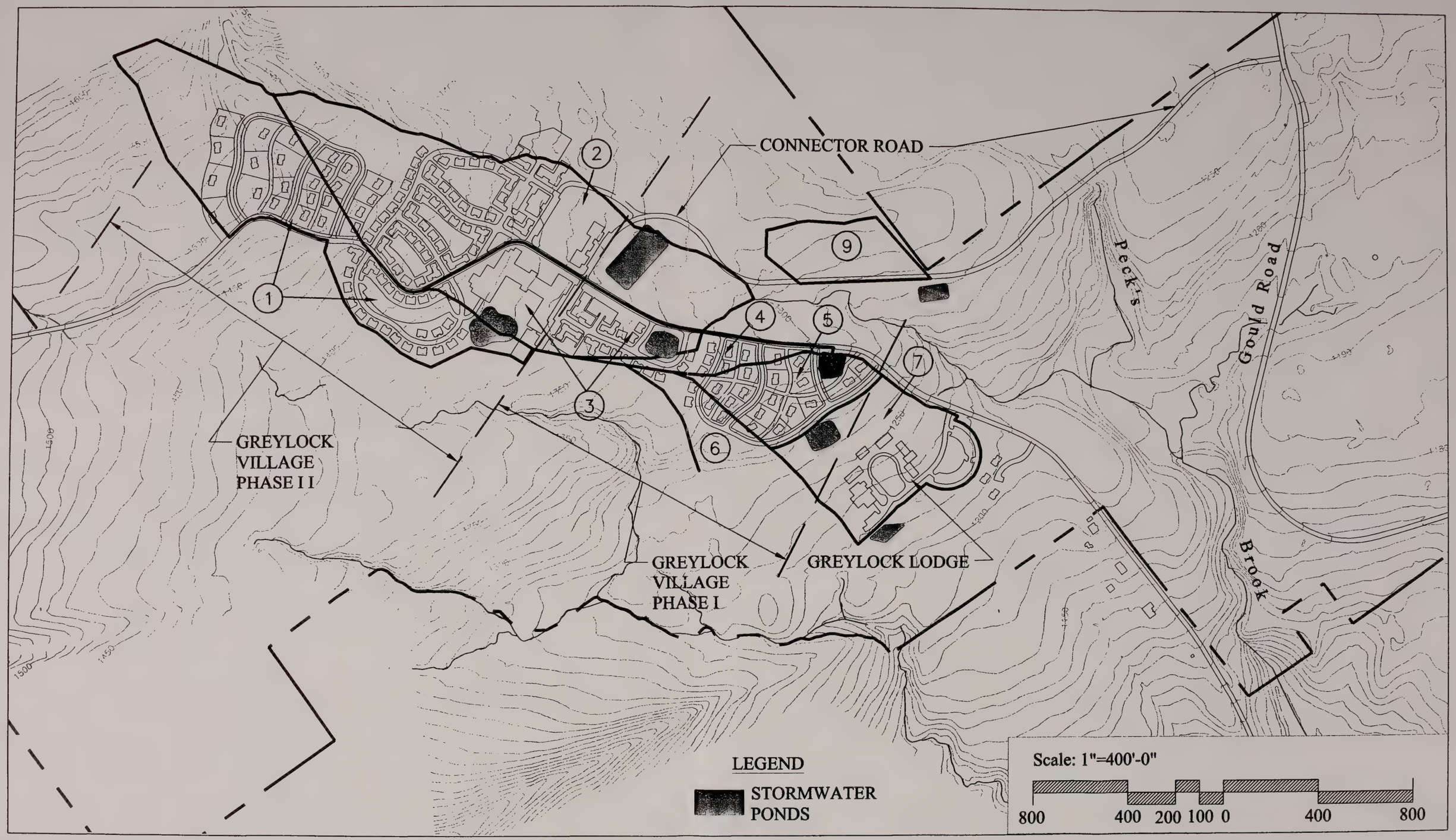
Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

Construction of the *Greylock Village* will alter drainage patterns. To mitigate those impacts, a Stormwater Management System will be provided in accordance with DEP's *Stormwater Management Policy* Standards, as set forth below.

Post-Development Peak Discharge Rates (Standard 2)

Presented below is a summary of hydrologic analyses performed for the development area regarding existing and proposed conditions for the 2-year, 10-year and 100-year storm events. The proposed development area, for purposes



Greylock Center Project

Adams, Massachusetts

Department of Environmental Management
Greylock Management Associates

by Fay Spofford & Thorndike, Inc.

Drainage Area Delineation Plan
Village I, Village II, Lodge, Connector Road

January 28, 2000

FIGURE 5-3

NORTH

of the hydrologic analyses, is shown on Figure 5-3 as four subcatchment areas: Area 3 totals 6.28 acres and encompasses the lower-most portion of Greylock Village (Phase II) and the upper-most portion of Greylock Village (Phase I). Area 4 totals 2.19 acres and encompasses the central portion of Phase I development along West Mountain Road. Area 5 totals 5.49 acres and encompasses the east-central portion of this same development area, while Area 6 totals 2.46 acres and encompasses the southeast-most corner of the development. All existing soils are within hydrologic Group B.

From the results presented in Tables 5-5 to 5-7, it is shown that the construction of a stormwater management pond near the lower end of each drainage area, with the exception of Area 6, will attenuate post-construction conditions peak discharge rates to less than existing conditions peak discharge rates for the storm events evaluated. A summary of discharges for Area 6 is not presented since a majority of the area will remain in its natural condition. The minor portions of the development which occur within Drainage Area 6 will be mitigated within Area 5.

Recharge to Groundwater (Standard 3)

Within the residential portion, proposed conditions impervious areas will consist of roofs, walkways, roadways and access drives. The total impervious areas depicted on the schematic design plans are summarized below for each of the four drainage areas. Based on the requirements of DEP's *Stormwater Management Policy* of 0.25 inches of runoff to be recharged to groundwater for Group B soils, the total recharge volume within the Phase I portion of the Village will be 4,630 cubic feet (see Table 5-8). This volume will be recharged by collecting roof runoff from each proposed building and discharging the runoff into the ground using a leaching pit. The installation of one 6-foot diameter leaching pit, 3 feet deep, will be more than adequate to accommodate each proposed structure. The calculated volume of 176 cubic feet within each pit is equivalent to the volume of 0.25 inches from 8,450 square feet of impervious area. Accordingly, a minimum of 28 leach pits will be required to meet the standard. The schematic design depicts approximately 43 residential-type structures and several larger buildings, all of which will be used to collect and convey roof runoff to leaching pits for groundwater recharge.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

To achieve the required TSS removal, a street sweeping program will be implemented as part of the maintenance program. All roadways and parking areas will be constructed with deep sump catch basins. Stormwater runoff will

be collected in a closed drainage system and will discharge to an extended detention pond or wet pond. Three ponds are anticipated within the Greylock Village, Phase I development.

Table 5-5 Drainage Area 3 Runoff Characteristics – Greylock Village Phase I

	Drainage Area (Acres)	Runoff Curve Number	Time of Concen-tration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	6.28	62	16.7	0.96	4.70	11.26	0	0	0
Post-Development without Attenuation	6.28	81	10.1	7.08	14.69	24.93	0	0	0
Post-Development with Attenuation	6.28	81	10.1	0.96	4.59	11.20	0.27	0.49	0.71

Table 5-6 Drainage Area 4 Runoff Characteristics – Greylock Village Phase I

	Drainage Area (Acres)	Runoff Curve Number	Time of Concen-tration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	2.19	62	4.8	0.42	2.13	5.18	0	0	0
Post-Development without Attenuation	2.19	74	4.2	1.78	4.48	8.40	0	0	0
Post-Development with Attenuation	2.19	74	4.2	0.45	2.22	4.38	0.05	0.09	0.15

Table 5-7 Drainage Area 5 Runoff Characteristics – Greylock Village Phase I

	Drainage Area (Acres)	Runoff Curve Number	Time of Concentration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	5.49	60	9.0	0.66	4.25	10.82	0	0	0
Post-Development without Attenuation	5.49	66	5.5	1.87	6.8	14.85	0	0	0
Post-Development with Attenuation	5.49	66	5.5	0.41	3.81	10.60	0.06	0.13	0.21

Table 5-8 Summary of Impervious Areas and Recharge Requirements

Location	Impervious Area (Ft^2)	Estimated No. of Bldgs.	Required Recharge Volume (Ft^3)	Volume per Leach Pit (Ft^3)	Required No. of Leach Pits
Area 3	134,600	13	2,800	176	16
Area 4	30,135	13	630	176	4
Area 5	44,485	17	930	176	6
Area 6	13,030	5	270	176	2
	222,250	48	4,630	N/A	28

The ponds will be designed to capture, store and treat one inch of rainfall from the roads, walks and parking areas. For the pond draining Area 3, the first flush depth will be approximately 7 inches, based on a 9,000 square foot pond. For the pond draining Area 4, the first flush depth is estimated to be 3½ inches, based on a 4,000 square foot pond, and for the pond draining Area 5, the first flush depth is estimated to be 8½ inches, based on a 2,500 square foot pond. The maximum depth of each pond will be considerably deeper.

5.2.5 Greylock Village - Phase II

The Greylock Village, Phase II complex is proposed to be an all encompassing community within itself. Some of the major components of the Phase II Village are: hotel/conference center, food service, retail shops, and housing. Construction of Phase II will be market-driven.

The village development's location is proposed to be to the north and the south of West Mountain Road, approximately one mile from West Road, and could encompass in excess of 25 acres. Within this area, the topography is mountainous, with lower elevations of 1,340 and higher elevations of 1,550. The southerly terminus of the proposed connector road establishes, in a general sense, the easterly limit of the Phase II village. For the purpose of hydrologic analyses, the Phase II village area is presented as two subcatchment areas (see Figure 5-3). Existing soils within both areas are entirely hydrologic Group B soils. Drainage Area 1 consists of 13.65 acres along the south side of the Village. Drainage Area 2 consists of 14.58 acres along the north side of the Village. Runoff from Drainage Area 1 flows generally eastward to the south side of West Mountain Road to a tributary of Peck's Brook. Runoff from Drainage Area 2 flows generally northeastward to the north side of West Mountain Road to a tributary of Peck's Brook.

Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

Phase II construction of the village will cause changes to the site drainage characteristics. New outfalls downgradient of the village are expected. Therefore, the drainage system for the Phase II village will be designed to meet the requirements of DEP's *Stormwater Management Policy* Standards 2 through 9., as set forth below.

Post-Development Peak Discharge Rates (Standard 2)

Peak stormwater runoff rates for existing and proposed conditions for the 2-year, 10-year, and 100-year storm events are presented in Tables 5-9 and 5-10 for Drainage Areas 1 and 2, respectively. As seen from these results, the construction of a stormwater management pond near the lower end of each drainage area will attenuate post-construction conditions peak discharge rates to less than existing conditions peak discharge rates for the storm events evaluated.

Table 5-9 Drainage Area 1 Runoff Characteristics – Greylock Village Phase II

	Drainage Area (Acres)	Runoff Curve Number	Time of Concentration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	13.65	60	20.1	1.44	8.03	20.43	0	0	0
Post-Development without Attenuation	13.65	69	12.4	5.95	17.58	35.93	0	0	0
Post-Development with Attenuation	13.65	69	12.4	1.12	8.00	20.67	0.22	0.50	0.83

Recharge to Groundwater (Standard 3)

Within the Greylock Village, Phase II complex, proposed impervious areas will consist of roofs, walkways, roadways and access drives. The total impervious area depicted on the schematic design plan is approximately 134,000 square feet within Drainage Area 1, and 339,000 square feet within Drainage Area 2. Based on the requirements of DEP's *Stormwater Management Policy* of 0.25 inches of runoff to be recharged to groundwater for Group B soils, the total recharge volume within the Phase II Village will be 2,800 cubic feet within Area 1 and 7,060 cubic feet within Area 2. This volume will be recharged by collecting roof runoff from each proposed building and discharging the runoff into the ground using a leaching pit. The installation of one 6-foot diameter leaching pit, 3 feet deep, will be more than adequate to accommodate each proposed structure. The calculated volume within each pit is equivalent to the volume of 0.25 inches from 8,450 square feet of impervious area. Accordingly, a minimum of 56 leach pits will be required to meet the standard. The schematic design plan depicts approximately 80 residential-type structures and several larger buildings, all of which will be used to collect and convey roof runoff to leaching pits for groundwater recharge.

Table 5-10 Drainage Area 2 Runoff Characteristics – Greylock Village Phase II

	Drainage Area (Acres)	Runoff Curve Number	Time of Concentration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	14.58	60	23.2	1.47	5.94	20.87	0	0	0
Post-Development without Attenuation	14.58	80	17.2	12.98	27.60	47.51	0	0	0
Post-Development with Attenuation	14.58	80	17.2	1.42	4.74	20.58	0.71	1.34	1.93

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

To achieve the required TSS removal, a street sweeping program will be implemented as part of the maintenance program. All roadways and parking areas will be constructed with deep sump catch basins. Stormwater runoff will be collected in a closed drainage system and will discharge to an extended detention pond or wet pond. Two ponds are anticipated within the Phase II village development area (see Figure 5-3).

The ponds will be designed to capture, store and treat one inch of rainfall from the roads, walks and parking areas. For the pond draining Area 1, the depth below the outlet will be approximately 9 inches, based on a 10,000 square foot pond. For the pond draining Area 2, the depth below the outlet is estimated to be 13 inches, based on a 17,200 square foot pond.

5.2.6 Greylock Lodge

Greylock Lodge, an environmental education facility, is proposed down-gradient of the proposed Phase I village area. The development is comprised of five buildings that will serve as lodging, dining and classrooms, plus three residential buildings for staff. The site is totally wooded and slopes to the east at approximately 9 percent. Stormwater runoff travels in an easterly direction behind existing dwellings on West Mountain Road, to an existing wetland. All existing soils are classified as hydrologic Group B soils.

Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

Construction of Greylock Lodge will alter drainage patterns. To mitigate those impacts, a stormwater management system will be provided in accordance with DEP's *Stormwater Management Policy* Standards, as set forth below.

Post-Development Peak Discharge Rates (Standard 2)

The area of hydrologic analyses for the Greylock Lodge portion of the project is shown as Area 7 on Figure 5-3. Drainage Area 7 consists of 4.64 acres adjacent to the south side of West Mountain Road, east of the Phase I village area. The analysis of existing and proposed conditions for the 2-year, 10-year and 100-year storm events, as presented below in Table 5-11, demonstrates that post-development peak discharge rates associated with Greylock Lodge, subsequent to being routed through a stormwater management pond, will not exceed pre-development peak discharge rates. The proposed stormwater management pond will be sited near the southeast quadrant of the Lodge.

Recharge to Groundwater (Standard 3)

Upon construction completion, added impervious areas will include the roofs, walkways, access drives and roadway, totaling approximately 44,670 square feet. The proposed parking areas will be constructed of open cell paver blocks planted with grass seed to minimize runoff and encourage groundwater recharge. Based on the requirements of DEP's *Stormwater Management Policy* of 0.25 inches of runoff to be recharged to groundwater for Group B soils, the total recharge volume within the Lodge area will be 930 cubic feet . This volume will be recharged by collecting roof runoff from each proposed building and discharging the runoff into the ground, using a leaching pit. The installation of eight 6-foot diameter leaching pits, 3 feet deep, in proximity to the proposed campus buildings will be more than adequate to meet the groundwater recharge standard.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

To achieve the required TSS removal, a street sweeping program will be implemented as part of the maintenance program. All roadways and parking areas will be constructed with deep sump catch basins. Stormwater runoff will be collected in a closed drainage system and will discharge to an extended detention pond or wet pond. The pond will be designed to capture, store and

treat one inch of rainfall from the roads, walks and parking areas. The depth of storage below the outlet will be approximately 12 ½ inches, based on a 26,300 square foot pond.

Table 5-11 Drainage Area 7 Runoff Characteristics – Greylock Lodge

	Drainage Area (Acres)	Runoff Curve Number	Time of Concen-tration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	4.64	60	10.1	0.55	3.48	8.95	0	0	0
Post-Development without Attenuation	4.64	68	10.1	1.89	6.07	12.58	0	0	0
Post-Development with Attenuation	4.64	68	10.1	0.53	3.28	9.21	0.06	0.13	0.20

As a part of the environmental education program, a constructed wetland, organic sand filter, or a third party treatment system (Stormtreat, Vortechnics, Downstream Defender, or Stormceptor) may be utilized to improve the quality of the stormwater well beyond what is required in the regulations.

5.2.7 Connector Road

As a second access to the proposed village, the Town of Adams has agreed to seek funding for construction of the connector road. This proposed two lane roadway will extend from Gould Road to the village for a length of approximately 3,400 linear feet. A proposed wooden covered bridge will span Peck's Brook. The proposed roadway alignment will follow the existing topography, avoiding encroachment into wetlands.

Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

Construction of the proposed connector road will alter drainage patterns. To mitigate those impacts, a Stormwater Management System will be designed in accordance with DEP's *Stormwater Management Policy* Standards using catch basins with deep sumps, vegetated swales, detention basins and proprietary, third party stormwater treatment systems.

Post-Development Peak Discharge Rates (Standard 2)

A stormwater management pond is proposed to be constructed adjacent to the connector road on the east side of the road, south of Peck's Brook. Drainage Area 9, as shown on Figure 5-3, represents the land area tributary to the site of the proposed pond. Table 5-12 presents a summary of existing and proposed conditions for the 2-year, 10-year and 100-year storm events. As seen from the data, peak post-construction discharge rates will be limited to approximately existing peak discharge rates.

Recharge to Groundwater (Standard 3)

The proposed connector road will be constructed predominantly over existing hydrologic Group B soils. Of the approximately 3,400 linear feet of roadway, 2,700 linear feet will be over hydrologic Group B soils and 700 linear feet will be over hydrologic Group B/C soils. The Group B/C soils occur on the south side of Peck's Brook from the brook's centerline southward up the existing slope. Based on DEP's *Stormwater Management Policy*, and a proposed roadway width of 20 feet, the required recharge volume will be 105 cubic feet per 250 linear feet of roadway. This volume will be recharged to groundwater as part of the stormwater collection/conveyance/treatment system.

Table 5-12 Drainage Area 9 Runoff Characteristics – Connector Road

	Drainage Area (Acres)	Runoff Curve Number	Time of Concen-tration (Min.)	Peak Runoff Rates Storm			Peak Storage Volume Utilized (AC-FT)		
				2 Yr.	10 Yr.	100 Yr.	2 Yr.	10 Yr.	100 Yr.
Pre-Development	3.10	60	21.7	0.32	1.78	4.54	0	0	0
Post-Development without Attenuation	3.10	64	13.8	0.69	2.79	6.30	0	0	0
Post-Development with Attenuation	3.10	64	13.8	0.24	1.92	4.46	0.03	0.06	0.10

One potential system would consist of a pair of deep sump catch basins spaced at 250-foot intervals along the roadway edge; a swirl-concentrator treatment facility such as Vortechnics, Stormceptor or Downstream Defender to receive stormwater from the catch basins and remove the suspended solids and floatables from the stormwater; then an infiltration system such as a leaching pit,

drywell or underdrain system, or a Stormtreat system to further polish the stormwater and return it to the ground. During times of major storm events, runoff rates in excess of the capacity of the various system components would be diverted around the facilities. Each element of the proposed system will be designed to meet DEP Standards.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

Classified as a Cold Water Fishery, Peck's Brook is considered a Critical Area. To achieve the required TSS removal, a street sweeping program will be implemented as part of the maintenance program. The connector road will be constructed with deep sump catch basins and hoods. The discharge of stormwater from the catch basins will be diverted through a designed treatment train, as discussed above. The treatment train will be designed to capture and treat at least the first one inch of runoff from the roadway draining to the treatment system.

5.2.8 West Mountain Road/West Road Intersection

Improvements are planned at the intersection of West Mountain Road and West Road. The West Mountain Road alignment will be straightened requiring the demolition of a single family dwelling and causing the intersection to move southerly along West Road about 15 feet. This realignment will move West Mountain Road away from Peck's Brook. The proposed work is within the 100' buffer of wetlands bordering Peck's Brook, as well as in the riverfront area. Upon completion of Final Design, a *Notice of Intent* will be filed with the Adams Conservation Commission and the DEP, whereupon the nine stormwater management standards will be addressed in more detail.

Compliance with the DEP Stormwater Management Standards will be addressed, as follows:

Untreated Stormwater (Standard 1)

Realignment of the intersection will not alter drainage patterns. In fact, by relocating the roadway further away from Peck's Brook, there is less of a chance that roadway pollutants will enter the brook. The existing drainage system consisting of catch basins and an outfall to the brook will be evaluated. At a minimum, catch basins with deep sumps will be installed at the new roadway location. It is anticipated that the existing outfall can be reused, and no new outfalls will be required.

Post-Development Peak Discharge Rates (Standard 2)

The elimination of the dwelling, paved driveway, and garage, in conjunction with re-vegetation activities, is expected to compensate for any roadway widening. No increase in-post-development peak discharge rates are anticipated.

Recharge to Groundwater (Standard 3)

No increase in impervious area is planned; therefore, no loss of groundwater recharge is expected.

Removal of 80% Total Suspended Solids (TSS) (Standard 4)

Final design of the modified intersection will include implementation of *Best Management Practices* for stormwater management. As a minimum, new catch basins will include deep sumps and hood. The use of vegetated swales along off-roadway areas will also reduce TSS within the stormwater.

Redevelopment (Standard 7)

The reconstruction of West Mountain Road at the intersection of West Road is considered to be a redevelopment project. It is expected that all standards can be met.

5.2.9 DEP's Stormwater Management Policy - Standards 5 - 9.

Of the nine performance standards to be addressed, Standards 5 through 9 will be undertaken project-wide, as follows:

Land Uses with Higher Potential Pollution Loads (Standard 5)

The proposed Greylock Center development, with the exception of the golf maintenance facility, is not considered a land use that could generate a higher potential pollution load. The use of fertilizers and pesticides for the golf course is described in the *Integrated Pest Management Plan* (IPM). Stormwater management procedures associated with the golf maintenance facility are addressed in Section 5.2.3.

Critical Areas (Standard 6)

The proposed Greylock Center development is proximate to two types of critical areas. Both Hoxie Brook and Peck's Brook are classified as cold water fisheries. Certified vernal pools, classified as Class B Outstanding Resource Waters (ORW)

are also known to exist on the project site. In accordance with DEP Standards relative to critical areas, the stormwater management facilities presented herein have been sized to treat 1.0 inches of runoff from all paved surfaces.

Redevelopment (Standard 7)

Although a golf course was previously on the site, proposed golf course development will not be considered a redevelopment. Consequently, stormwater management facilities for the golf course will be designed to meet applicable standards. Stormwater management associated with the redevelopment of the West Mountain Road/West Road intersection are addressed in Section 5.2.8.

Erosion and Sediment Control (Standard 8)

To insure against eroded sediments reaching any resource area during construction, hay bales and/or silt fence will be installed prior to the initiation of any earth work. Soil erosion and sediment controls will be conducted in accordance with the *Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas* (Franklin, Hampden, Hampshire Conservation Districts; March, 1997) and the *Western Massachusetts Streambank Protection Guide* (Franklin, Hampden, Hampshire Conservation Districts; January, 1998). Additionally, a Stormwater Pollution Prevention Plan designed to control stormwater runoff during construction will be prepared and implemented in conjunction with the Notice of Intent to be filed with the EPA National Pollutant Discharge Elimination System (NPDES) Permit. All controls will be maintained in proper working order throughout the construction period and will remain in place until all exposed earth has been stabilized by vegetation or pavement or, proximate to resource areas, until issuance of a Certificate of Compliance by the Adams Conservation Commission.

Operation and Maintenance Plans (Standard 9)

The Commonwealth of Massachusetts' Department of Environmental Management, owner of the land, will lease the facility to Greylock Management Associates (GMA). As part of the Master Lease, GMA will be required to inspect and maintain the BMPs associated with this development.

Upon completion of final design, a BMP inspection and maintenance program will be proposed as a part of the *Notice of Intent* to be filed with the Adams Conservation Commission and the Massachusetts Department of Environmental Protection.

5.3 Summary

Sections 5.1 and 5.2, above, demonstrate the manner in which each component of the *Greylock Center* development site will be designed to meet the nine (9) performance standards as defined by the DEP *Stormwater Management Policy*.

The drainage analysis indicates that with attenuation, peak post-development discharge rates will not exceed pre-development discharge rates. Runoff from roof tops will be captured then discharged to infiltration systems designed to meet DEP guidelines for groundwater recharge. Removal of 80% of the annual total suspended solids loading will be accomplished through various stormwater treatment trains proposed for each project component. A combination of deep sump catch basins with hoods, vegetated swales, check dams, wet ponds, extended detention ponds, and Third Party Proprietary Systems (e.g., Stormtreat, Vortechnics, Downstream Defender, Stormceptor) will comprise the stormwater treatment train.

With respect to facilities potentially yielding higher potential pollution loads, the maintenance facility will be equipped with floor drains that are piped to grease traps. Effluent from the grease traps will discharge to the building's sanitary sewer. As stated above, stormwater management measures also will be implemented to address critical areas, redevelopment and erosion/sediment control standards.

As described in Section 4.3, a surface water quality monitoring program also will be implemented both prior to and during facility construction/operation. This monitoring effort, to occur at the site boundaries down-gradient from proposed construction/development activities at three locations, will be conducted quarterly for a period of five (5) years following the completion of Phase I construction. Subsequent to the 5-year monitoring program, its further implementation will be re-evaluated based upon the collective water quality database and the anticipated schedule for Phase II implementation.

Greylock Management Associates, the operator of Greylock Center, will be required to adhere to an operation and maintenance program through the Master Lease Agreement with the Commonwealth of Massachusetts' Department of Environmental Management. The operation and maintenance program will not only require scheduled street sweeping and catch basin cleaning, but will also require inspection and repair of all elements of the stormwater management facilities.

Based on the above, the proposed Greylock Center project will comply with all applicable DEP Stormwater Management Standards.

6.0 MITIGATION

6.1 Overview

Mitigation measures associated with the proposed Greylock Center project include sustainable site planning and design measures directed at resource avoidance/ minimization and compensation, as well as procedures to be implemented during facility construction. The preceding sections have focused primarily on site planning measures, including such site layout modifications as golf hole relocation and reductions in the number of resource/trail crossings. The following discussion describes other design, construction and operational procedures aimed at mitigating potential project-related impacts. Specifically, this FEIR section addresses:

- Wetland Compensation Plan creating 2.5 times more wetlands than are impacted by the entire project;
- Stormwater Management Practices that meet DEP stormwater management guidelines;
- Integrated Pest Management to enable golf turf to naturally resist pests, diseases, and drought; and
- Habitat Stewardship Plan to protect natural resources throughout undeveloped portions of the site.

6.2 Wetland Compensation Plan

6.2.1 Background

A wetland compensation program has been developed by Wetlands & Wildlife, Inc., wetland consultant to the Greylock Center design team. Portions of this plan are excerpted below, while the compensation program developed by Wetlands & Wildlife is reproduced in its entirety in Appendix G.

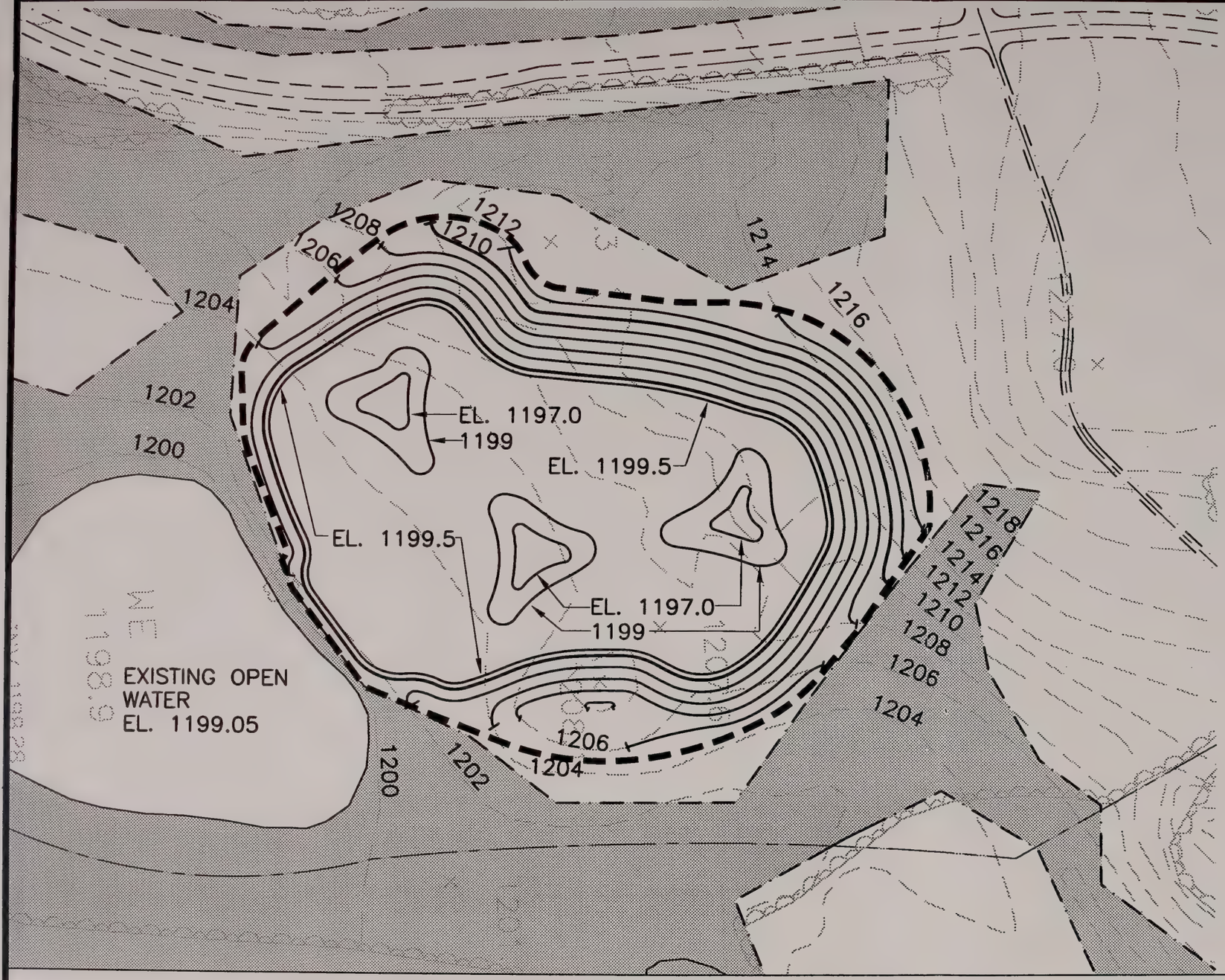
As previously described in Section 3.0, vegetated wetland impacts associated with the proposed Greylock Center project will occur at 26 locations, totaling approximately 4,675 square feet (SF). Of this total, approximately 4,100 SF is limited to vegetative clearing associated with construction of the multi-use trail system, and golf holes. Therefore, no loss of vegetated wetland resources will result from these vegetative clearing actions. Vegetated wetland losses only will be associated with two locations (Crossings 5a and 5c) where trail widening will result in impacts to approximately 575 SF of vegetated wetland.

With specific respect to Crossing 5a, however, it should be noted that the actual area of delineated wetland to be disturbed totals approximately 2,045 SF. This includes 450 SF of currently vegetated wetland and 1,595 SF of an existing dirt road that was incorporated into the wetland delineation and approved by the Adams Conservation Commission. While included in the delineation as a bordering vegetated wetland, the dirt road does not play a role relative to the interests of the MA Wetlands Protection Act (MA WPA) for which bordering vegetated wetlands are presumed significant. Accordingly, its area (1,595 SF) was excluded from the wetland impact calculation associated with trail improvements at this location.

Regardless, as described below, wetland creation activities will be implemented to compensate for all impacts to vegetated wetlands, including the above-referenced 1,595 SF excluded from the calculation of wetland impacts. Specifically, implementation of the proposed wetland compensation plan will result in the creation of approximately 15,650 square feet (SF) of vegetated wetlands, as well as an additional area of open water totaling approximately 2,750 SF.

A variety of locations throughout the Greylock Center property were identified as potentially suitable for wetland compensation purposes. The Glen area, however, was determined to be most suitable, particularly with respect to hydrologic conditions required for the establishment and long term viability of wetlands. This site selection rationale is supported by the extensive wetland system already present at this location, with many of the wetlands having been 'created' by the initiation and abandonment of past construction activities. More specifically, the northern portion of the Glen exhibits the added advantage of providing both vernal pool and rare species habitat, most notably breeding sites for the Jefferson salamander, a State-listed species of special concern, as well as other vernal pool species. Based upon an evaluation of surrounding habitat conditions, this portion of the Glen also is directly proximate to terrestrial salamander habitat. Consequently, site selection focused on this portion of the overall site where, in addition to creating compensatory wetlands, vernal pool and rare species habitat to augment existing habitat conditions also may be established.

In light of the above, a site located in the northwestern portion of the Glen was selected as best meeting the site selection criteria. This site presently is dominated by old field vegetation, with herbaceous plant species being most abundant. The site's location is indicated on Figure 1-1, and in greater detail in Figures 6-1 and 6-2.



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING WETLAND
- PROPOSED OPEN WATER
- LIMIT OF DISTURBANCE

NORTH

SCALE: 1"=40'-0"

80 40 20 10 0 40 80

FIGURE 6-1

GREYLOCK CENTER PROJECT - Wetland Compensation Area / Conceptual Grading Plan

SCALE: 1" = 40'-0"

DATE: January 19, 2000

Massachusetts Department of Environmental Management
Greylock Management Associates
Copley-Wolff Joint Venture

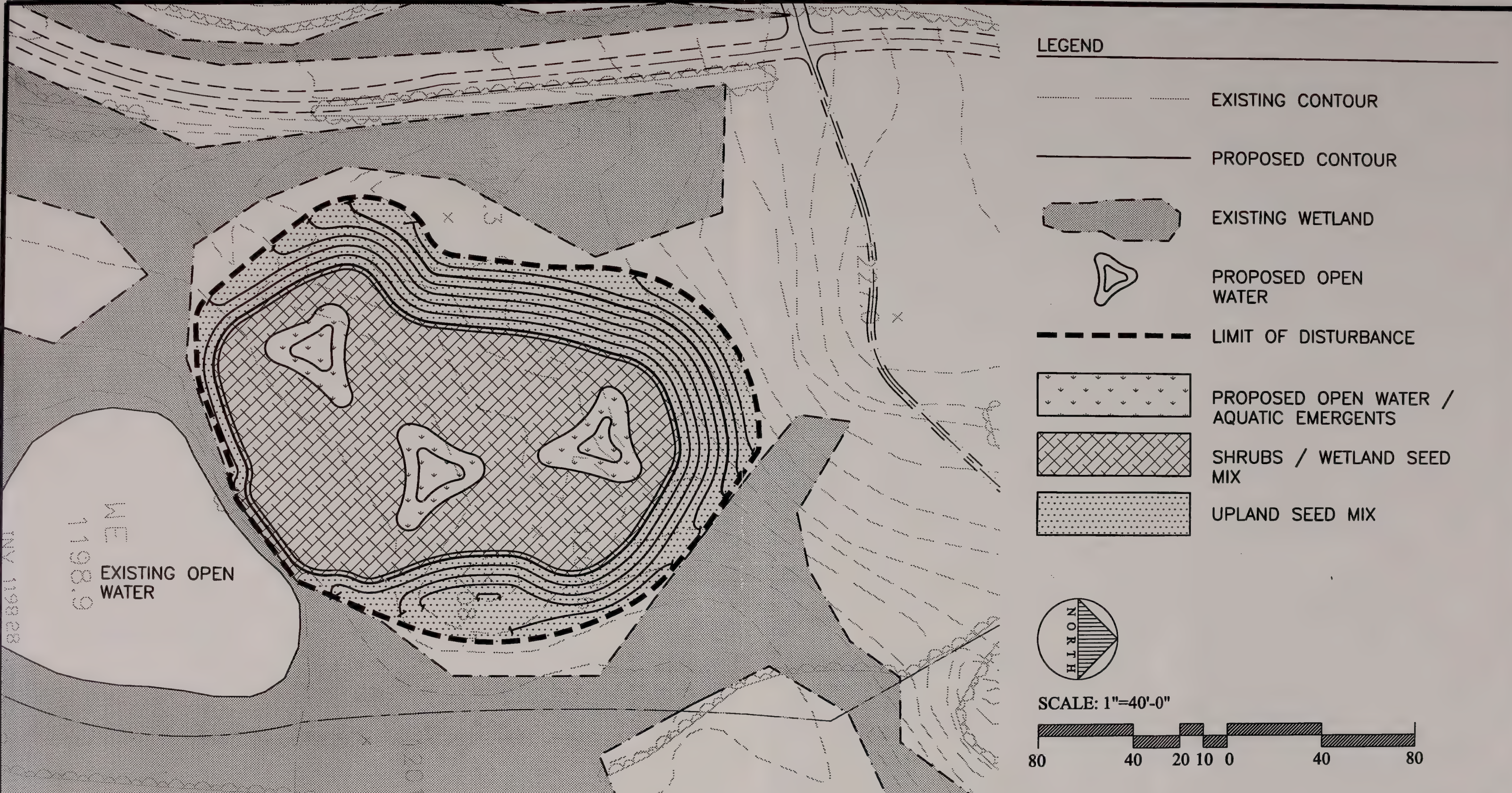


FIGURE 6-2

GREYLOCK CENTER PROJECT - Wetland Compensation Area / Conceptual Planting Plan

SCALE: 1" = 40'-0"

DATE: January 19, 2000

Massachusetts Department of Environmental Management
Greylock Management Associates
Copley-Wolff Joint Venture

6.2.2 Wetland Compensation Plan Implementation

Implementation of the proposed wetland compensation plan involves three basic elements: site preparation, planting and monitoring/maintenance.

With respect to site preparation, the boundaries of adjacent wetlands initially will be flagged, as will the limits of construction to preclude unnecessary disturbances. Hay bales and/or silt fencing also will be installed to control soil erosion and sedimentation with respect to nearby resources. These controls will be periodically inspected and maintained, as required, until issuance of a Certificate of Compliance by the Adams Conservation Commission.

Subsequently, existing vegetation within the wetland compensation site will be cleared, and the compensation area excavated and graded in accordance with the proposed plan. In this regard, the aerial extent of site disturbance will total approximately 31,250 SF (0.72 acres).

For the most part, the compensation area will be over-excavated by a minimum of six (6) inches, consistent with the proposed grading plan. Soil consisting of loam with at least 12% organic carbon content by weight then will be placed within the over-excavated portion of the wetland compensation area to attain final grades, as indicated on the proposed grading plan. Exceptions to this approach include the proposed open water areas that will be graded to a depth of approximately 2.5′ below the adjacent wetland elevation.

As the conceptual grading plan presented in Figure 6-1 indicates, the proposed wetland will have a base elevation of 1199.5′ above mean sea level (msl). This elevation has been selected based on pre-existing ground water monitoring documentation which indicate that suitable hydrologic conditions for wetland creation purposes exist at the selected base elevation.

After final grading, the planting program will be implemented. The general location of proposed planting material is provided by Figure 6-2, and a list of species to be utilized within the compensation area is provided in Table 6-1. All planting will commence and be completed during the spring season to maximize opportunities for the establishment and growth of plantings during the first growing season.

Once planted, the wetland compensation area will be secured/fenced to discourage unauthorized entry into the site and site disturbance. Additionally, a monitoring and maintenance program will be implemented to ensure the success of wetland compensation efforts in accordance with regulatory agency

permit conditions. This monitoring and maintenance program will continue until issuance of a Certificate of Compliance by the Adams Conservation Commission.

As part of the monitoring/maintenance program, permanent brightly colored control stakes identifying fixed plot centers for monitoring purposes will be placed within the wetland compensation area immediately following site construction and planting. Photographic stations also will be established at these same monitoring locations to document the development of the wetland replacement area. Photographs will be taken coincident with each monitoring event. Photographs will be taken before, during and after site preparation and planting, as well. Each photograph will note the date, time, weather, and other relevant observations.

Table 6-1 Proposed Plant List for Wetland Compensation Area

Common Name	Scientific Name
Shrub Plantings	
Silky Dogwood	*Cornus amomum*
Winterberry	*Ilex verticillata*
Swamp Azalea	*Rhododendron viscosum*
Elderberry	*Sambucus canadensis*
Highbush Blueberry	*Vaccinium corymbosum*
Wild Raisin	*Viburnum cassinoides*
Herbaceous Plantings	
Sweetflag	*Acorus calamus*
Water Plantain	*Alisma plantago-aquatica*
Marsh Marigold	*Caltha palustris*
Pickerelweed	*Pontederia cordata*
Northern Arrowhead	*Sagittaria latifolia*
Burreed	*Sparganium americanum*

Throughout the monitoring period, the wetland replacement area will be monitored in detail monthly during the growing season, or as specified otherwise in the Order of Conditions to be issued by the Adams Conservation Commission. General observations will be made relative to the integrity of erosion/sedimentation controls, the establishment of vegetation, side-slope

stabilization, and factors/events adversely affecting the viability of the wetland compensation area. These factors/events may include herbivory or invasion by such species as *Phragmites australis* or *Lythrum salicaria*. Under these circumstances and if corrective action is warranted, the most appropriate course of action will be coordinated between the MA Department of Environmental Management and the Adams Conservation Commission.

In addition to the above-referenced general observations, baseline data for evaluation of the wetland replacement area will be collected at each monitoring station on a monthly basis during the growing season. These data will consist of plant species composition and percent cover. For monitoring locations associated with herbaceous vegetation, data collection will be based upon the establishment of five (5) foot radius plots, with the fixed staked locations cited above to serve as the plot centers. For monitoring locations associated with shrub/scrub vegetation, data collection will be based upon the establishment of fifteen (15) foot radius plots, with the fixed staked locations to serve as the plot centers.

Lastly, for the duration of the monitoring period, monitoring reports will be prepared annually and provided to the Adams Conservation Commission. The first annual report will be prepared at the end of the first growing season following wetland compensation plan implementation. These annual reports will document all data collected and observations made during the preceding year (including photographs), all activities undertaken relative to the wetland compensation area, and summarize any agency consultations. The annual reports also will provide an evaluation of the wetland replacement area with respect to stated goals and objectives in order to establish permit compliance. Recommended courses of action, including any corrective measures, will be documented, as well.

6.2.3 Wetland Compensation Summary

As indicated in Table 6-2, implementation of the proposed wetland compensation plan will result in the establishment of approximately 15,650 SF of scrub/shrub and emergent wetlands. An additional area of open water totaling approximately 2,750 SF also will be created, with each of the three proposed open water pool areas to be approximately 900+ SF.

Overall, wetland creation activities will yield a replacement ratio for vegetated wetland impacts of approximately 2.5:1, a ratio that includes the above-referenced 1,595 SF excluded from the calculation of wetland impacts. Excluding this latter area from the compensation area ratio determination and, coincidentally, incorporating the proposed area of open water to be created, wetland resources (vegetated wetlands and open water) will be replicated at a

ratio of 3.9:1 relative to wetland impacts (*i.e.*, 18,400 sf of compensation to 4,675 sf of impacted areas). Thus, under the proposed compensation plan, the Greylock Center project will result in a net increase of approximately 15,075 sf of vegetated wetlands and 17,825 sf of wetland resources.

Table 6-2 Wetland Compensation Site Areas

Compensation Site Feature	Area (Square Feet)
Vegetated Wetland	15,650
Open Water	2,750
Wetland Side Slopes	12,850
Total Area of Disturbance	31,250

6.3 Stormwater Management

Section 5.0 provides a full discussion of proposed stormwater management practices and demonstrates the manner in which each component of the *Greylock Center* development site will be designed to meet the nine (9) performance standards as defined by the DEP *Stormwater Management Policy*.

In summary, the drainage analyses indicates that with attenuation, peak post-development discharge rates will not exceed pre-development discharge rates. Runoff from roof tops will be captured then discharged to infiltration systems designed to meet DEP guidelines for groundwater recharge. Removal of 80% of the annual total suspended solids loading will be accomplished through various stormwater treatment trains proposed for each project component. A combination of deep sump catch basins with hoods, vegetated swales, check dams, wet ponds, extended detention ponds, and Third Party Proprietary Systems (e.g., Stormtreat, Vortechnics, Downstream Defender, Stormceptor) will comprise the stormwater treatment train.

With respect to facilities potentially yielding higher potential pollution loads, the maintenance facility will be equipped with floor drains that are piped to grease traps. Effluent from the grease traps will discharge to the building's sanitary sewer. .As stated above, stormwater management measures also will be implemented to address critical areas, redevelopment and erosion/sediment control standards.

As described in Section 4.3, a surface water quality monitoring program also will be implemented both prior to and during facility construction/operation.

This monitoring effort, to occur at the site boundaries down-gradient from proposed construction/development activities at three locations, will be conducted quarterly for a period of five (5) years following the completion of Phase I construction. Subsequent to the 5-year monitoring program, its further implementation will be re-evaluated based upon the collective water quality database and the anticipated schedule for Phase II implementation.

Greylock Management Associates, the operator of Greylock Center, will be required to adhere to an operation and maintenance program through the Master Lease Agreement with the Commonwealth of Massachusetts' Department of Environmental Management. The operation and maintenance program will not only require scheduled street sweeping and catch basin cleaning, but will also require inspection and repair of all elements of the stormwater management facilities.

Accordingly, the proposed Greylock Center project will comply with all applicable DEP Stormwater Management Standards.

6.4 Integrated Pest Management/ Turf Management Plan

6.4.1 Integrated Pest Management Plan

An Integrated Pest Management (IPM) Plan has been developed by Corcoran Jennison Hospitality Company (CJH) in cooperation with Hurdzan-Fry (HF) golf course architects. Prior to Greylock Center, CJH and HF collaborated on the highly successful Widow's Walk golf course in Scituate, MA, which has been heralded in the golf industry for its environmentally sound design and management practices. The full text of the IPM plan for the Greylock Center golf course is contained in Appendix B, while this section introduces excerpts from the IPM plan.

A properly designed and well-maintained golf course relies on a combination of cultural programs to ensure environmental quality and provide acceptable playing conditions. The primary cultural practices include mowing, fertilization and irrigation. Secondary cultural practices essential to quality turf, but used less frequently, include cultivation (vertical mowing and core aerification), top-dressing, rolling and other mechanical practices.

Pest management relies on the use of pesticides, however, using an Integrated Pest Management (IPM) approach, pesticide use is integrated within cultural practices to minimize chemical control of turf pathogens and pests. IPM is an ecologically based system that uses biological and chemical approaches to control potential and realized pathogens. IPM is a preventive approach incorporating a number of objectives including:

- development of a healthy turf grass that can withstand pest pressure;
- judicious and efficient use of chemicals;
- establishment of disease thresholds to direct pesticides applications;
- enhancement or introduction of populations of natural and/or beneficial organisms; and
- taking effective, appropriate action at an early or preventive stage often based on thresholds or indicator areas, resulting in the reduction of pesticide usage.

These five objectives are met through the seven components of a successful IPM Program. The components are:

- Monitoring
- Regulatory
- Genetic
- Cultural
- Physical
- Biological
- Chemical

The IPM plan in Appendix B provides a discussion of each of these components.

IPM strategies will be incorporated into every aspect of Greylock Center golf course operation so they are part of the daily routine of the maintenance personnel. This whole maintenance approach will include the following:

- Selection of the best-adapted turf grass species and cultivars for this site (presented below in Section 6.4.2). Turf grasses have been selected that are appropriate quality species and cultivars for the grow-in phase of the golf course, which are suitable for the New England climate. Flexibility will be used in the future, should a particular cultivar or species be prone to disease or perform poorly in the particular environment in Adams. Any potential over-seeding will take into account past performance and maintenance requirements of the turf grass.
- The use of proven cultural practices such as aerification to reduce compaction, vertical mowing to reduce excessive thatch build-up,

top-dressing to provide a high quality putting surface, maintenance of proper soil nutrient levels to best determine the fertility requirements of the turf grass, sound irrigation management, and proper mowing techniques to minimize disease potential and produce a high quality playing surface.

- A judicious pesticide management program to control those pests and pathogens that exceed a predetermined tolerance level for acceptable turf growth and quality.

- The continued monitoring of the turf for conditions that may precede pest problems and observations for critical changes in pest and beneficial organism populations.

The objective of this IPM plan is to develop low risk fertilizer, irrigation and pesticide programs that will minimize potential impact to the surrounding environment. An essential aspect of any IPM program is that these programs are administered on a day-to-day basis by a golf course superintendent sensitive to environmental concerns of the property and well experienced in golf course maintenance. CJH will place such a qualified and certified superintendent at the course during its construction.

6.4.2 Turfgrass Selection

The factors in selecting turf grasses that are appropriate to a particular site include:

- Climatological conditions for the region;
- Soil conditions of the site;
- Drought tolerance;
- Resistance to disease and insects (thus lowering chemical demand);
- Suitability for establishment on the site;
- Compatibility with adjoining grasslands and woodlands;
- Resistance to annual grasses and weeds;
- Tolerance and recovery to winter conditions;
- Quality of irrigation water;
- Desirability for golf playing situation; and
- Availability of certified seed, clean of harmful pests and nuisance seed in accordance with good turf growing practices

The grassing scheme for the Greylock Center golf course recognizes several distinct zones associated with each fairway, including not only greens, tees, and fairways, but also treating the near rough, outer rough, and non-play/native areas with different seed mixes. The IPM plan contained in Appendix B provides an overview of the major turf grass species and their attributes, and of those turf grasses, selects a particular species mix for each of the aforementioned zones of the golf course, as presented in Table 6-3.

Table 6-3 Grassing Selections for the Greylock Center Golf Course*

Greens	Penn A-2 Creeping Bentgrass Seed rate: 1.25 lbs. / 1,000 sq.ft.
Tees	Penncross Creeping Bentgrass Seed rate: 1.25 lbs. / 1,000 sq. ft.
Fairways	PennTrio Creeping Bentgrass Seed rate: 35 lbs. / acre and 40% Tiffany Chewings Fescue 20% Shadow Chewings Fescue 20% Shademaster II Creeping Red Fescue 20% Seabreeze Slender Creeping Red Fescue Seed rate: 250 lbs. / acre
Near Rough	10% Challenger Kentucky Bluegrass 25% Wildwood Kentucky Bluegrass 25% Defiant Hard Fescue 15% Shadow E Chewings Fescue 15% Shademaster Creeping Red Fescue 10% Advantage Perennial Ryegrass Seed rate: 250 lbs. / acre
Outer Rough	30% Big Horn Sheeps Fescue 30% Discovery Hard Fescue 20% Tiffany Chewings Fescue 20% Shademaster II Creeping Red Fescue Seed rate: 300 lbs. / acre
Non-Play / Native Areas	50% Little Bluestem 15% Indiangrass 15% Reliant Hard Fescue 10% Azure Blue Sheep Fescue 10% Jamestown II Chewings Fescue Seed rate: 80 lbs. / acre

*Note: All fescue and bluegrass seed to have high endophytes

6.4.3 Turf and Weed Management

6.4.3.1 Turf Establishment

Before planting, annual weeds can be controlled by irrigating to allow germination, followed by cultivation or application of a contact herbicide. Repeating this process two or three times will improve the chances of establishing a turf grass with a minimum of weeds. Using turf grass sod in well-prepared soil that has been cultivated and amended to improve water-holding capacity in sandy soil or to improve drainage in clay soils will decrease annual weeds. Soil that is wet for long periods of time, often as a result of poor drainage, favors some weeds such as red sorrel, curly dock, nutsedge, and annual bluegrass.

Populations of some perennial weeds such as dallisgrass, Bermuda grass, and purple nutsedge can be reduced before planting turf by cultivating in summer and keeping the soil completely dry to dehydrate the propagules (stems, rhizomes, tubers). Rework the soil to bring up new propagules, but be sure to keep the soil dry; three to four cultivations may be needed for best results.

Managing Established Turf

Turf grass can be established and maintained to discourage weeds in the turf or to decrease chances for weed invasion. Any condition that exposes the soil surface to additional light allows weeds to invade. Weed problems are often the result of over watering or under watering, mowing too low or too high, low fertility, excessive wear, disease or insect damage, soil compaction, and excessive shading.

Fertilization

Proper fertilization of turf grass is an important component in producing vigorous, dense growth. Low fertility, especially low nitrogen, is one of the factors that allow weeds to invade turf. Nitrogen should be applied monthly during the year when the turf is actively growing using the following guidelines:

Turf Area	**Nitrogen (lb/1000 sq ft/yr)**
♦ Greens	♦ 4-6
♦ Tees	♦ 2-4
♦ Fairways	♦ 2-3
♦ Near Rough	♦ 1 ½-2
♦ Outer Rough	♦ ¾-1
♦ Non-Play/Native	♦ 0

In general, the Greylock Center golf course will be fertilized to the minimum level required to maintain a healthy turf grass system. A majority of the annual fertilizer will be applied during the late spring and early summer months. Conversely, there are times when fertilizer will not be applied. For example, late fall applications of fertilizer sometimes referred to as "dormant feeds" will be avoided. The turf grass is not actively growing and the turf plant cannot efficiently absorb excess nutrient applications. Additionally, late fall applications of nitrogen have been shown to increase the potential of pink snow mold and the potential of nitrate leaching. Excessive summer applications of nitrogen will increase the potential of fungal disease such as pythium and brown patch. Fertilizer will be applied lightly and evenly to ensure the material is fully absorbed by the turf grass.

Fertilizer applied judiciously over time will provide high quality turf grass while eliminating potential non-point source contamination. An important step in determining a sound plant nutrition program is to have the soil analyzed to determine pH, and availability of calcium, magnesium, phosphorus and potassium as well as the micro-nutrients manganese, zinc and copper. In addition to the soil tests, CJH will have representative tissue samples analyzed to correlate with soil analysis that will determine the efficacy, or the rate at which applied materials are incorporated into the turf plant. From this information, a valid fertility program will be developed with the assurance that excess nutrients will not be applied.

Fertilizer application strategies for the Greylock Center golf course are described further in the IPM contained in Appendix B.

6.4.3.2 Weed Management

A dense, vigorously growing, competitive stand of turf grass will resist invasion by weeds. Integrated weed management focuses on establishing and maintaining a competitive stand of turf. While it is difficult to eliminate all weeds from turf, in highly maintained turf it is possible to prevent large irregular patches of weeds, which make turf unattractive and reduce its utility.

The objective of an integrated weed management program is to keep weed populations below levels that are incompatible with the purpose of the turf. The first step is preparing the site properly and choosing an appropriate turf grass species for the location, followed by cultural practices that contribute to turf vigor, such as proper irrigation, mowing, fertilization, thatch removal and aeration. The increased vigor allows turf to better withstand insect, disease, and nematode damage and to recover more quickly. Healthy turf can also out-

compete weeds and reduce the chances of their becoming established. Herbicides are used as tools in turf management where high quality turf is required; however, their use will be integrated with a good cultural program.

6.4.3.3 Irrigation Management

Irrigation is needed for both cool and warm season turf grasses. It is very important to follow good irrigation practices, regardless of turf grass species used, so that optimum growth and development of turf grass is obtained. A rapidly growing, competitive turf grass sward resists weed invasion.

A uniform application of water is extremely important for maximum efficiency because it is important to avoid wet and dry spots within the sward. (Proper timing and an adequate amount of irrigation are necessary for optimum growth, maximum quality, and best appearance of the respective turf species.) Turf is weakened in wet spots because of poor soil aeration and root disease that can result in the invasion of shallow-rooted weeds such as crabgrass, annual bluegrass, and oxalis. Also, runoff from over irrigated areas is wasteful and results in accumulation of water in low parts of the sward. In contrast, dry sites will be characterized by turf of poor color, density, and uniformity that allows the invasion of deep-rooted weeds such as dandelions, plantains, clover, knotweed, and yarrow.

Key points for maximum irrigation efficiency:

- Irrigate deeply, but infrequently.
- Irrigate late at night or early in the morning. At these time water loss from evaporation is minimal and distribution is usually good because of good water pressure and limited wind.
- Avoid runoff by matching water application rates to soil infiltration rates (the rate water enters the soil).
- Use less water in shaded areas than in open sun.
- Remove thatch in spring if it is more than 0.5 inch thick.
- Do not over fertilize; fertilize moderately according to the individual species and location.

Monitoring

Regular weed surveys (winter, spring, and summer) will help determine what species are present, their approximate population levels, and what types of management practices may be necessary. The superintendent will maintain a written weed history to aid in making future weed management decisions.

A well-trained and experienced golf course superintendent will scout to detect symptoms and signs of pest problems on a daily basis. The superintendent will closely observe each area of the property for the presence of pathogens or stressed and disease susceptible turf, particularly since the Greylock Center golf course will be a new course. As the course matures, certain areas will be identified as "indicator" areas. These areas will generally develop disease before other areas on the property. In this way, effective monitoring will identify potential pests and determine an integrated plan of action by observing the disease symptoms in the "indicator" areas. This approach coupled with site specific history, consulting with other superintendents, and consultations with specialists in turf grass management, will produce an effective monitoring program. While economic advantages of IPM are marginal, the sociological and environmental consequences of judicious pesticide use are strong justification for implementation.

6.4.3.3 Pest Management

Biological Control of Pests

Biological control is the integrated application of antagonistic organisms coupled with the conservation and enhancement of natural enemy habitats within the golf course property. Effective biocontrol illustrates the IPM concept of maintaining the golf course as a complete integrated ecosystem. Where possible, biological control products will be incorporated in the pest management at the Greylock Center golf course.

There are several species of entomopathogenic or "insect eating" nematodes which have shown success in previous field studies against surface feeding insects such as sod webworms and cutworms. One commercially available product is a formulation of *Steinernema carpocapsae* sold as Exhibit, Biosafe, BioVector and Orthoganic.

A neem tree extract, Azadirachtin, has been found to repel several kinds of insects and often causes them to stop feeding. Success with this product has been seen with surface feeding pests, such as sod webworms and cutworms. Commercial formulations include Margosan-O, Turplex and Bioneem.

By limiting the number of broad-spectrum insecticide applications, natural enemies of pests should be encouraged. Pathogens or noxious insects should be identified and appropriate material selected for application specific to the identified pest.

Ladybugs, dragonflies and spiders all prey on noxious, pest insects. These and other natural predators will be conserved and encouraged wherever their habitat

is identified. Specific plant species to be conserved will be decided upon on an individual basis. Attractive aquatic submerged plants include lilies, pickerelweed and various grasses.

By encouraging nesting birds such as tree swallows, bluebirds and other insect eating species, noxious insects such as mosquitoes and gnats will be reduced. Placement of nesting boxes will be undertaken in conjunction with the Greylock Center Stewardship Plan to attract the desired species of birds to the site.

Pesticide Selection

When necessary, pesticides will be used to reduce pathogen pressure and maintain quality turfgrass. Pesticides will be selected which are less toxic, less persistent, less water soluble and less volatile whenever feasible. All pesticides selected for use at the Greylock Center golf course will be screened for their potential to be sources of nonpoint pollution. Only materials that have a reasonable margin of safety will be included on the recommended list. Appendix I includes a list of pesticide properties that will be used to evaluate appropriate products for use at the Greylock Center golf course.

Correct Application of Pesticides

Pesticides will only be applied when environmental conditions for drift are minimal. No pesticides will be applied on high wind days. Also, applications will be avoided when heavy rain is forecast. Certain pesticide label instructions require irrigation with appropriate volumes of water or may suggest using wetting agents or surfactants. The certified pesticide applicator will closely follow label directions concerning application rate, irrigation water and appropriate adjuvants. All equipment connected with pesticide application will be precisely calibrated and in excellent working order. Any and all required maintenance to the spray equipment will be noted and immediately corrected. The golf course superintendent will supervise pesticide applications.

6.4.4 IPM Conclusion

A golf course is a carefully maintained property whereby qualified superintendents strive to select the BMPs that provide the highest quality-playing surface while minimizing chemical inputs to achieve set goals. IPM at Greylock Center will help to manage and view the property as a vibrant ecosystem very much connected to the ecology of the site. With such a strong connection to the surrounding environment, a qualified superintendent will make informed and appropriate choices to best manage the golf course within the accepted IPM and BMPs outlined within this document. The development and implementation of a turf

IPM plan utilizing BMP has been shown to virtually eliminate any potential contamination by pesticide/nitrate movement into groundwater or wetland areas when properly trained personnel follow established procedures. Research has shown that mature turfgrass ecosystems have the ability to restrict, degrade and utilize most pesticides with far more efficacy than any other agricultural endeavor. These results are a reflection of the relatively large and extensive root systems of mature turfgrass, yearly deposits of great quantities of organic matter to underlying soils and extremely active soil microbial population. IPM/BMP ensure that all possible methods are being applied to reduce and eliminate potential non-point source contamination.

6.5 Greylock Center Stewardship Plan

In order to fulfill the environmental goals of the Greylock Center project, a Stewardship Plan has been developed for the overall property, which identifies proactive management activities to protect and enhance a variety of resources supported on the site. The recommendations of the Greylock Center Stewardship Plan are reproduced below, while the full text of the plan are provided in Appendix A.

6.5.1 Management Responsibilities

The stewardship plan recognizes that several entities share responsibility toward protecting and enhancing Greylock Center property resources. These include DEM, GMA (or its designees), and the Town of Adams. Further, DEM and GMA propose to form the Grelyock Trust, a charitable, not for profit organization which will serve to coordinate others' management activities as well as directly undertaking certain management and monitoring activities described in the Stewardship Plan. The Trust will be modeled after the successful Wintergreen Foundation at the Wintergreen Resort in Virginia. The mission of this organization will be to foster the understanding, appreciation and conservation of the Greylock Center site as well as the adjacent Mount Greylock State Reservation and the Northern Berkshire region. The Trust will be governed by a Board of Trustees consisting of a representative of DEM, GMA, the Town of Adams, Nature's Classroom, Berkshire Institute at Greylock, and two additional members selected by the Commissioner of Environmental Management.

Activities of the Trust will be funded by assessing other site users (i.e., businesses) a percentage of their gross annual income, sales price, or real estate value, selling memberships, and charging camping and equipment rental fees. These assessments will be specified in the Master Lease with GMA. If

necessary, DEM and GMA will provide initial start-up funding for the trust. However, it is anticipated that ongoing operating expenses will be fully funded by revenues generated by Greylock Center facilities.

6.5.2 Stewardship Implementation Guidelines

Land stewardship activities to be coordinated by the Trust within each of the Greylock Center habitat types are discussed below.

6.5.2.1 Sensitive Natural Communities

Stewardship recommendations for sensitive natural areas address the most unique and/or vulnerable resources, such as rare species habitat and vegetative communities identified as 'Priority Natural Communities' by the Natural Heritage and Endangered Species Program. The Greylock Center property supports three such communities: Rich Mesic Forest, Calcareous Fens, and a Calcareous Outcrop. The following management recommendations should be implemented to sustain these particularly sensitive resources.

Habitat Enhancement

No physical alteration of unique natural communities is recommended unless there is an indication that intervention is required to ensure protection or enhancement of habitat characteristics within these areas. For instance, it may be determined through monitoring that discrete segments of established trails require maintenance to prevent erosion, such as the creation of water bars. As another example, if an invasive exotic species is observed, eradication efforts may be warranted (e.g., oriental bittersweet, disseminated by birds, is becoming ubiquitous even in shaded woodlands; this species is easily managed by hand pulling of young seedlings, whereas it is difficult to control once established.) Aside from such 'light-handed' activities geared specifically toward protecting the ecological integrity of the riparian corridor, the intention is to sustain the ecological integrity of unique natural communities.

Monitoring

Water Quality Monitoring

DEM has committed to conduct baseline sampling and to perform quarterly water quality monitoring of the three perennial streams which discharge off-site (Hoxie Brook, Peck's Brook, and an unnamed tributary to Peck's Brook). In addition, Greylock Center educational programming (e.g., Nature's Classroom and the Park's College) may supplement this sampling program at locations which are readily accessible along the multi-use trail network. The educational

programs should develop sampling regimes that would serve to target potential sources of sampling constituents (e.g., immediately downgradient of Gould Farm, above and below active beaver dams)

Rare and Native Wildlife Species Population Monitoring

Periodic inspection is recommended to assess populations of Appalachian Brook Crayfish, Northern Spring Salamander, and native brook trout. Such monitoring will require obtaining a permit from the Massachusetts Division of Fisheries and Wildlife. Aquatic species monitoring should be performed by a qualified biologist, and may be appropriate to the DEM Parks College programming or through the Greylock Trust.

Rare Plant Species Monitoring

Several rare plant species are located on the Greylock Center property that warrant annual monitoring. In addition, a permanent vegetation plot was established by Pamela Weatherbee in the vicinity of one of these rare plant species locations in conjunction with the natural resources inventory and assessment coordinated by the Center for Ecological Technology (CET). This permanent plot location, as with the rare species locations, should not be publicly disseminated, however monitoring of these locations should be performed by a botanist under applicable DFW permit conditions.

Invasive Plant Species Monitoring

As previously discussed, invasive species monitoring and prompt eradication is critical to maintaining the ecological integrity of natural areas. Invasive species monitoring accordingly requires continual vigilance, and monitoring should be conducted on an ongoing basis as an adjunct to other monitoring activities (e.g., rare plant monitoring and trail monitoring), by instructing persons engaged in such activities with the ability to identify invasive species. The Guide to Invasive Plants In Massachusetts, published by the Massachusetts Natural Heritage and Endangered Species program, provides an excellent reference for the identification of such species.

Trail Conditions Monitoring

Trails in proximity to sensitive natural resources will be monitored on a semi-annual basis, once in late spring to assess conditions before peak season, and again in the autumn to determine whether any mitigative measures are necessary to handle runoff from rain events and spring runoff. Seasonal photos at fixed locations are suggested as a useful means of monitoring trail conditions over time. As an adjunct to monitoring of trail conditions, the area will also be

inspected for invasive species. Monitoring shall be undertaken by the Greylock Trust personnel and the trails operator or licensed representatives trained both in trail maintenance and in invasive species identification.

Environmental Education Opportunities

Due to the fragility of certain resources, only limited environmental educational opportunities will be undertaken within these areas. As part of the various educational programs, low-impact educational activities may periodically take place (e.g., bird census or trail maintenance instruction), however the intent is to minimize disturbance in sensitive areas, and only allow access via established trails.

Public Recreational Facilities

Due to the fragility of certain resources supported by the Greylock Center property and their proximity to Mount Greylock State Reservation, it is only appropriate to allow dispersed recreational activities, such as hiking and cross-country skiing along defined trail corridors. Proposed trail corridors as identified in the Greylock Center FEIR will be reviewed in the field prior to development of construction specifications. Where appropriate, the alignment of the proposed corridor may be modified to minimize the grade of the trail (thereby reducing the potential for trail erosion), or to preserve a particular feature (e.g., boulders, outcrops) or mature trees.

6.5.2 Habitat Management Areas

Numerous opportunities exist for managing the diversity of habitat types represented on Greylock Center property. As described in Section 3, the Greylock Center site supports a diverse assemblage of habitat types, with primary categories being forests, opens areas, and wetlands. Habitat management areas include those portions of the Greylock Center property which may benefit from discrete activities specifically targeted to benefit certain plant and wildlife habitats, such as bi-annual brush-hogging to maintain shrubland habitat for songbirds, or annual mowing of a wet meadow to sustain preferred larval food sources for invertebrates, such as butterflies. Stewardship activities to sustain these habitat types are described below.

Enhancement of Open Habitat

Several areas will be actively managed to maintain varying levels of succession in order to sustain open habitat for species which require non-forested conditions. There are three areas in which periodic mowing will be employed to provide 'old field' and shrubland habitat: the large field at the southerly end

of the Greylock Center property; areas between fairways in the 'front 9' and adjacent to the central glen wetland and areas which had previously been cleared as alpine ski slopes, which provide ideal viewing opportunities along proposed trails.

Due to the statewide shortage of this habitat type, maintenance of open areas is a stewardship priority. Existing open areas should be managed to preserve multiple stages of regrowth at various locations through the Greylock Center property. Many of these may be adjacent to and managed by the golf course operator. Each stage would feed and provide nesting sites for different species. Stages of regrowth include:

- mowed grassy fields which would attract field nesting birds such as bobolinks, savannah sparrows;
- fields with an abundance of taller growth such as goldenrods and asters with sparse shrubs; and
- fields that are on the verge of succeeding to shrublands.

These open areas will be utilized to educate visitors about species which rely upon field and shrubland plant species for nesting and foraging (e.g., butterflies, reptiles, and numerous bird species including Mourning warbler, a species of Special Concern), and the specific succesional stage preferred by such species. As with interpretive opportunities provided by wetlands (see below), management of open fields and shrublands will also include invasive species education, alerting visitors to opportunistic shrubs which displace native species, and whose structural characteristics, while appropriate and even preferable to certain birds, paradoxically render nests more susceptible to predation.

As a field begins to change into forest, it can be bush-hogged back to open field conditions thereby maintaining a rotating series of habitats. Sites for this treatment could include the old fields at the base of the ski area within the central 'glen' and golf course roughs. Groupings of trees should be preserved or introduced within these areas as perches with a natural undergrowth of grasses, forbs and shrubs.

Mowing in the fall, after all flowering has faded, preserves native forbs and grasses. Areas for bobolinks should be kept in grass and mowed in middle July after eggs have hatched and chicks fledged. Bobolinks require large expanses of grassland for nesting, accordingly the southern knoll provides ideal conditions to attempt to encourage bobolink nesting or to enhance bobolink habitat.

Enhancement of Wetland Habitat

Wetlands regulations in Massachusetts provide strong protection for ponds and streams, vegetated wetlands that border streams and water bodies, and floodplains. Accordingly, proactive management of wetland habitat requires formal filing and review of proposed activities under a Notice of Intent.

Three distinct wetland habitat enhancement recommendations are appropriate for areas within the Greylock Center property:

- periodic mowing of wet meadow and brush-hogging of shrubland in areas adjacent to -and partially within- jurisdictional wetland resources areas associated with the wetland complex in the central glen area;
- invasive species management, also within the central glen wetlands; and
- introduction of native trees and shrubs along stream corridors where more open conditions presently exist immediately adjacent to streams.

Maintenance of open conditions in areas which are only periodically inundated requires active, ongoing cutting of woody vegetation that may otherwise succeed into forested areas. Many species prefer open areas adjacent to or within wetlands for nesting (taking advantage of boles within wetlands as nesting platforms which are largely inaccessible to many mammalian predators) and for feeding (whether feeding on wetland plants themselves, or on insects and fish in wetland areas). Species which rely upon open areas adjacent to and within wetlands include Great Blue Heron, Black and Wood Ducks, Tree and Barn Swallows. In order to maintain open wetland habitats preferred by these species, a vegetation management program should be developed and submitted under a Notice of Intent to clearly define the limits of vegetation cutting in any given year, and to establish that such activities would only be conducted when soils are reasonably dry and firm to allow passage of mowing or brush-hogging equipment with minimum disturbance of wetlands soils.

Invasive species management techniques should also be undertaken within those area of the central glen wetlands which are being colonized by invasive species in accordance with a plan approved under a Notice of Intent/ Order of Conditions. DEM has initiated consultation with the Wetlands Restoration and Banking Program to seek their assistance in developing appropriate protocols for control of common reed (*Phragmites spp.*) and purple loosestrife (*Lythrum salicaria*). Management of these species provides an ideal opportunity for development of an educational exhibit which compares the extent (i.e., diminution) of invasive species form one year to the next.

Enhancement of Forested Habitat

According to the Massachusetts Division of Fisheries and Wildlife, approximately 80% of all bird and mammal species require two or three forest stages to meet their habitat needs. The remaining species require only a single forest stage, either mature or seedling forest, to meet their needs[1]. The following recommendations for forest management were designed to address these habitat requirements.

Mature Forest

Designated areas of mature forest should remain untouched to provide dead den trees, cavities, rotting nurse logs, tall trees for hawks and owls, and a natural understory of plant species associated with mature forest. Such mature forests also provide a seed reservoir to sustain populations of native forest species. In addition, conserving upland areas will help maintain habitat for state-listed wildlife. For instance, remote, forested areas containing patches of spruce, such as exist along the higher elevations along the western limits of the Greylock Center property, may provide suitable nesting habitat for sharp-shinned hawks and possibly blackpoll warblers. Areas of rich mesic forest containing populations of toothworts may provide important larval habitat for mustard white butterflies. Rich mesic forest occurs northwesterly of Peck's Brook, along the westernmost portion of the Thiel Farm parcel, and as a relatively small patch to the east of the rustic camping area. Mature forests containing beech and hazelnut may provide important habitat for larval early hairstreaks. Baseline field surveys conducted by Pamela Weatherbee in association with the CET natural resources inventory will be used to identify the best examples of each of these habitats, and monitoring of these areas will be conducted at the appropriate time of year to inventory the status of the plant of animal population (e.g., late spring for breeding bird inventory efforts, early summer for plant inventories).

Active forest management in proximity to known larval habitat for mustard white butterflies can also be undertaken to benefit the adult stage of this state-listed species. Although toothworts, the larval food plant for this butterfly, grow best in areas of mature forest, adult mustard whites often seek out breaks in the forest canopy as preferred foraging areas. Therefore, carefully planned patch cuts can be used to provide favorable foraging areas for adults in close proximity to appropriate egg-laying and larval habitat. Patch cuts may also be an

---

[1] DFW, 1994. Managing Forests to Enhance Wildlife Diversity in Massachusetts.

appropriate tool for enhancing habitat for early hairstreaks, another state-listed butterfly that depends on mature forests for larval habitat and open areas for their adult stage.

Early Successional Forest

Given the preponderance of mature forest in the adjacent Mount Greylock Reservation, and in Massachusetts as a whole[2], efforts should be made to sustain young forests and shrubland within the Greylock Center site to sustain the presently diverse habitat afforded by the early stages of natural succession. Many birds prefer such 'edge' conditions for nesting, wherein they are proximate to food sources in open areas, but afforded the refuge of numerous perches in adjacent forests.

As an example, although the state-listed mourning warbler has been documented on the site, and may use the property for nesting, shrubland habitat for this species cannot be maintained over time without active management. The mourning warbler is considered a shrubland specialist, preferring habitat that typically follows in the wake of some disturbance. Natural disturbances such as fire, hurricanes and major ice storms do not occur with enough frequency to maintain populations in Massachusetts. Forest management, via the creation of small clearcuts, can be used to maintain appropriate nesting habitat for this species over time. On-going forest management that maintains early successional forest (shrubland) on the site will also benefit the black-billed cuckoo, another shrubland specialist and an uncommon bird in Massachusetts.

Invasive Species Management

Portions of the Greylock Center property are already being colonized by invasive species. As previously mentioned, common reed is threatening important wetland systems, and certain shrubs, such as multiflora rose and autumn olive, have begun to dominate shrublands. Proper management techniques for invasive species depends upon the growth habit of the different species considered to be invasive, and the extent to which they have become established. Ideally, such species are managed as soon as individual plants are recognized, and before they have spread to such proportion that removal by hand becomes impractical. Thus, monitoring, followed by hand removal, is the preferred management method.

Invasive plant species can change the habitat for wildlife. Significant amounts of land alteration that will take place at Greylock Center will create ideal

---

[2] ibid

conditions for invasion of certain exotic plant species, and even the natural processes following the abandonment of beaver ponds can leave areas vulnerable to invasive species colonization. Land stewards must be trained in the identification of the most aggressive invasive species, and undertake appropriate efforts to manage invasive species populations, and eradicate such stands where possible.

Environmental Education Opportunities

Educational programming assocaited with habitat management areas will be shared between DEM and GMA or their designees. Undeveloped areas of the Greylock Center property provide many opportunities for DEM's "Watchable Wildlife" program, which identifies areas where exemplary opportunities exist for viewing wildlife. One example is trailside interpretative signage adjacent to the calcareous outcrop, identifying specific attributes of the natural community while advising visitors to view, but not walk within this area. Another educational opportunity is development of a program identifying various features along the ADA accessible nature trail, which traverses the central glen area. Finally, there are numerous opportunities to provide educational signage to assist Greylock Center visitors in identifying a variety of bird and mammal species which utilize different habitats on the site.

The Environmental Center will serve as an important core for environmental education activities for the public at large, while the DEM Parks College will provide instruction for state and municipal agency personnel with land stewardship responsibilities. In addition, the Greylock Trust, initially accommodated in the golf club house during Phase I of the Greylock Center build-out, will develop interpretive exhibits within the club house to educate both golfers and other visitors about ongoing habitat stewardship activities being undertaken by the Trust.

Public Recreational Facilities

Public recreational facilities will be dispersed throughout areas where active habitat management is proposed. Many of these recreational facilities areas will be geared toward providing an educational component as well. The provision of public recreation activities is central to DEM's mission, and the Greylock Center site provides a wealth of resources suited to outdoor recreation. Recreational uses that will be encouraged proximate to habitat management areas include hiking, camping, interpretive trails, mountain biking, cross-country skiing (on both groomed and natural snow), golfing, skating, and sledding. Golf carts will be restricted to designated trails only, and snowmobiles will be

restricted to those trails designated for snowmobile use prior to the development of the Greylock Center trail network. No other motorized recreational vehicles will be permitted on the property.

A number of support facilities will be constructed to enhance public recreation opportunities. Various facilities may be managed by either DEM, GMA or their designees (e.g., DEM may allow a private, non-profit organization to utilize trails for educational programming) to ensure that such facilities are properly maintained (e.g., trails are not eroded, litter is promptly removed and properly discarded).

6.5.3 Developed Areas

Although developed areas do not lend themselves to habitat management activities, it is nonetheless important to recognize that operations and maintenance activities in developed areas may have indirect effects on adjacent natural areas. Accordingly, it is appropriate that the following management protocols be undertaken in developed areas, which include the Village complex, the club house, and the golf maintenance area.

Habitat Enhancement

Habitat 'enhancement' activities in developed areas will essentially be limited to assuring that landscaping in association with these locations does not introduce ornamental species with invasive tendencies. For instance, burning bush (*Euonymous alatus*) is a highly popular ornamental species, which the general public does not yet recognize as an invasive plant. All proposed landscape materials should be reviewed, and Greylock Center residents and grounds managers should be advised to consult with a pamphlet published in 1998 by the Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program (NHESP) entitled *"A Guide to Invasive Plants in Massachusetts"*, which identifies several invasive species which are commonly used in ornamental landscaping, as well as identifying species commonly known by the general public to be invasive plants.

Monitoring

The most important monitoring and maintenance activity within developed areas is the proper inspection and cleaning of stormwater drainage features. These should be monitored and maintained on a semi-annual basis at minimum.

Environmental Education Opportunities

Classroom and meeting facilities located in the Village complex will be important centers for coordination of environmental education opportunities,

while areas designated for habitat management will serve as 'outdoor classrooms' as described above. The Village and clubhouse will accommodate larger groups to convene for instruction pertinent to environmental education, and smaller groups will disperse to other locations throughout the property for hands-on training.

Public Recreational Facilities

Management of public recreational facilities within the Village and clubhouse area will include recreational equipment rental and instruction provided by businesses housed in these locations.

7.0 DRAFT SECTION 61 FINDING

Project Name:	Greylock Center
Project Location:	Adams, Massachusetts
Project Proponent:	Commonwealth of Massachusetts, Department of Environmental Management, in partnership with Greylock Management Associates
EOEA File No.	11083

This Finding has been prepared in compliance with the requirements of Massachusetts General Laws Chapter 30, Section 61. Chapter 30 Section 61 requires state agencies and authorities to review, evaluate and determine impacts on the natural environment of all projects or activities conducted or permitted by them, and to undertake all feasible means and measures to minimize and prevent damage to the environment. In making a determination, agencies are required to issue a "Section 61 Finding" describing project impacts, and certifying that all feasible mitigation measures have been taken. This draft Finding, prepared for inclusion and review in the Final Environmental Impact Report (FEIR) for Greylock Center, is intended to aid state agencies in meeting their requirements and should serve as the basis for the agency Section 61 Finding to be included with all state agency issued permits for the construction and operation of the various Greylock Center program components which require state agency action.

Project Description

Greylock Center is a public-private development project proposed by the Massachusetts Department of Environmental Management (DEM), and the private developer selected to assist in the implementation of the project, Greylock Management Associates (GMA) in consultation with the DEM Board and the Greylock Center Advisory Committee. The 1,063 acre Greylock Center property was purchased by the Commonwealth of Massachusetts in accordance with Chapter 676 of the Acts of 1985, a legislative action which enabled the State to acquire the land, and which mandated the creation of a regional economic development and recreational facility to be realized through a public/private partnership. The Greylock Center site plan and programming seeks to provide a variety of recreational activities and environmental education opportunities. These activities will be supported by commercial, institutional and residential infrastructure designed to complement the site's natural resources. Major program elements and project phasing has been described in detail in the EIRs for the Greylock Center project.

History of MEPA Review

DEM submitted an Environmental Notification Form for Greylock Center on March 18, 1997 and the Secretary of Environmental Affairs issued a Certificate on the ENF on May 12, 1997. The Secretary determined that the project required an Environmental Impact Report (EIR) and the Certificate provided the scope of the EIR.

A Draft EIR (DEIR) was filed with the Secretary on June 30,1998, and the Secretary of Environmental Affairs issued a Certificate on the DEIR on September 16, 1998, which recommended that DEM and GMA pursue a "Modified Site Plan" as the preferred alternative. Further development of this alternative led to a number of site plan revisions. On July 22, 1999, DEM met with MEPA representatives to discuss these revisions, which in large part had been made in response to public comment on the DEIR. The Director of the MEPA Office recommended that DEM present these revisions through a Notice of Project Change (NPC) prior to filing the Final Environmental Impact Report. Accordingly, an NPC was filed on August 30, 1999, and the Secretary issued a Certificate on the NPC on October 15,1999, modifying the scope of the FEIR as warranted by changes to the site plan and proposed infrastructure. The FEIR for Greylock Center was filed on February 15, 2000. These Section 61 Findings incorporate discussion in each of the MEPA documents by reference, and summarize the major mitigation commitments made by DEM and GMA to ensure that the Greylock Center project is implemented in a manner which minimizes environmental effects of the project and properly mitigates those impacts which are unavoidable.

Related Permits and Approvals

Greylock Center requires a number of state permits that trigger review under the Massachusetts Environmental Policy Act. The issuing authorities must comply with MGL C. 30, Section 61 to ensure that the proponent has described the impacts and proposed mitigation to minimize and prevent damage to the environment. A list of the state permits required by the project is provided below. This list additionally presents federal and local permits and approvals required for the construction of Greylock Center, which are provided to indicate that there are several other review procedures that will serve to complement the MEPA process toward ensuring that all feasible means and measures to minimize environmental impacts will be undertaken.

Permits Required for Construction and Operation of Greylock Center at Full-Build

Permit	Issuing Authority	Comments
Federal Permits		
National Pollutant Discharge Elimination System Construction (NPDES) Permit for Stormwater Discharges from Construction Activities	EPA	Required to ensure provision of proper erosion /sedimentation controls and to establish protocols for construction monitoring for projects involving >5 acres of land disturbance
State Permits		
Public Water Supply (Transient population >25)	DEP	Required for development of water supply well to serve rustic cabins
Approval of Distribution Systems Modifications BRP-WS-32	DEP	Required for water main extension, storage tank, and pump station to serve potable and irrigation/snowmaking water needs
Sewer Extension Permit BRP-WP-13	DEP	Required for construction of sewer main >2,500 ft in length (beneath West Mountain Road)
Disposal System Construction Permit for State or Federal Facilities BRP-WP-63	DEP	Required for construction of any sanitary disposal system constructed on Greylock Center property other than discharge to municipal sewer (e.g., rustic cabins composting toilets)
Project Notification Form (PNF)	MHC	In accordance with a Memorandum of Understanding (MOU) between DEM and the Massachusetts Historic Commission, a PNF is required for any project on DEM property which involves disturbance of earth
Local Permits and Approvals		
Order of Resource Area Boundary Delineation	Conservation Commission	Established limits of jurisdictional wetlands resources; issued on 4/13/99
Order of Conditions (Notice of Intent)	Conservation Commission	Required for activities proposed within jurisdictional wetland resource areas and/or 100' buffers (e.g., trail crossings, golf course construction within buffer zone)
Special Permit (zoning)	Zoning Board of Appeals	Required for Planned Unit Resort Development per zoning bylaws
Site Plan Approval	Planning Board	Routine permit
Subdivision Approval	Planning Board	Routine permit

Permit	Issuing Authority	Comments
Local Permits (cont.)		
Sewer Connection	Department of Public Works	Routine permit
Water Connection Permit	Adams Fire District	Routine permit
Building Permits	Building Department	Routine permit
Board of Health Permits	Board of Health	Routine permit
Alteration of Roadway Layout	Board of Selectmen	Routine permit
Street Opening Permit	Department of Public Works	Routine permit
Curb Cut Permit	Department of Public Works	Routine permit

Overview of Project Impacts

Potential impacts that may result from the construction and operation of Greylock Center are grouped by issue topics, as follows:

- State-Listed Species
- Existing Vegetative Communities
- Wetlands, Water Quality and Drainage
- Water Supply
- Wastewater
- Agricultural Resources
- Cultural Resources
- Traffic

Project impacts are summarized by issue topic below. Following the discussion of potential impacts, the environmental effects of each impact is described, followed by the proposed mitigation measures that will offset potential impacts

7.1 State-Listed Species

No direct impacts to state-listed rare species are anticipated to result from the construction and operation of Greylock Center. State-listed species habitats have been considered throughout the planning and design of the Greylock Center site plan in order to maintain substantive buffers to rare species locations

wherever possible. Nonetheless, indirect impacts to state-listed species remain a critical concern. Potential indirect impacts include changes to the physical, biological and chemical characteristics of the ambient environment, albeit that direct impacts have been avoided.

Mitigation Measures

DEM and GMA have committed to a number of mitigation measures to prevent adverse indirect impacts to state-listed species. These measures include:

- Baseline water quality sampling and quarterly monitoring at the 3 locations which convey the vast majority of surface water discharges from the Greylock Center property, with annual reporting to DEP and NHESP for a period of five years. Prior to the commencement of any construction activity, baseline water quality will be established at designated sampling points. DEM will consult with DEP and NHESP in the fifth year of sampling to determine whether continued monitoring is warranted, and/or to reconsider the frequency of monitoring or modify the constituents to be monitored. The proposed monitoring program is described in Section 4 of the Greylock Center FEIR.

- Monitoring of rare plant species locations.

  DEM will monitor rare plant species locations on an annual basis in order to document the number of specimens present and to identify any evidence of habitat degradation, whether resulting form human activity or natural causes (e.g., community succession). This information will be submitted to NHESP to supplement its database.

7.2 Existing Vegetative Communities

Impacts to existing vegetative communities will occur within the Greylock Center Stewardship Plan. These development zones include the Greylock Center Village, golf course, and the internal roadways and trail systems. Presently existing vegetative communities will also be (positively) impacted by habitat management activities designed to enhance the quality and quantity of certain habitat types, such as restoration of old field communities where scrub and sapling growth has begun to predominate.

Mitigation Measures

DEM and GMA will undertake the following measures to protect and enhance the existing vegetative communities in areas beyond the footprint of proposed Greylock Center development activities:

- Implement the activities proposed in the Greylock Center Stewardship Program which are designed to sustain several differing vegetative cover types and age classes of forested habitat.

- Develop a program which rotates the mowing sequence to foster differing types of habitats for plant, animal and insect species (e.g., ensure that some meadows are not cut until ground-nesting birds have fledged, while cutting other areas earlier in the season, thereafter allowing mature vegetation which may harbor insect larvae to 'winter over'.

- Monitor and manage invasive species throughout the Greylock Center property, as described in the Greylock Center Stewardship Program.

7.3 Wetlands, Water Quality and Drainage

Potential impacts to wetlands, water quality and drainage patterns may result from land clearing and grading operations at numerous locations where golf course, village, and trail development is proposed. Given the extensive wetland systems throughout the property, and the fact that state-listed species occur in many of these wetland areas, adequate erosion and sedimentation control measures are critical to safeguarding sensitive wetland resources. Operational impacts to wetlands, water quality and drainage patterns may result from increased runoff and changes in runoff constituent characteristics from developed areas and from turf management practices within the golf course and village.

Mitigation Measures

Wetland Compensation Plan

Vegetated wetland impacts associated with the proposed Greylock Center project will occur at 26 locations, totaling approximately 4,675 square feet (SF). Of this total, approximately 4,100 SF is limited to vegetative clearing associated with construction of the multi-use trail system, and golf holes. Therefore, no loss of vegetated wetland resources will result from these vegetative clearing actions. Vegetated wetland losses only will be associated with two locations (Crossings 5a and 5c) where trail widening will result in impacts to approximately 575 SF of vegetated wetlands significant to the statutory interests of the MA Wetlands Protection Act.

Regardless, wetland creation activities will be implemented to compensate for all impacts to vegetated wetlands. Specifically, implementation of the proposed wetland compensation plan will result in the creation of approximately 15,650

square feet (SF) of vegetated wetlands, as well as an additional area of open water totaling approximately 2,750 SF.

Detailed Erosion and Sedimentation Control Plan/ Construction Monitoring

DEM and GMA will develop a detailed erosion and sedimentation control program prior to any site clearing activities. This program will be the basis for the NPDES Stormwater Pollution Prevention Plan and will also be presented and implemented through the Notice of Intent/ Order of Conditions permit process with the Adams Conservation Commission. The plan will identify Best Management Practices and follow the guidelines of DEP's Stormwater Management Policy. These measures are necessary to protect wetlands and water quality downgradient of proposed construction activities. The erosion and sedimentation control plan will form the basis of specifications to be included in construction bid documents, such that contractors are fully aware of their responsibilities and associated performance standards. This plan will include the following elements:

- Identification of acceptable access roads and staging areas
- Surface treatment of access roads and staging areas
- Seasonal timing and contract duration
- Location of temporary sedimentation basins (including those for access & staging areas)
- Program for maintenance and abandonment/restoration of temporary basins (including identification of means to access basins)
- Construction phasing, to minimize disturbed areas at any given time (with particular attention to instability during grow-in periods)
- Monitoring by an independent construction monitor, to be approved by the Adams Conservation Commission
- Monitoring and reporting of construction activities on a weekly basis at a minimum, with supplemental monitoring during and after storm events.

Stormwater Management System Maintenance

Greylock Management Associates, the operator of Greylock Center, will be required to adhere to an operation and maintenance program through the Master Lease with the Commonwealth of Massachusetts' Department of Environmental Management. The operation and maintenance program will not only require scheduled street sweeping and catch basin cleaning, but will also

require inspection and repair of all elements of the stormwater management facilities.

Water Quality Monitoring Program

In that the perennial streams on the Greylock Center property support two state-listed species, DEM will monitor water quality as described in the Greylock Center Stewardship Plan. This program includes collecting baseline data prior to construction, and quarterly monitoring for a period of five years following completion of golf course construction. If, based upon water quality sampling results, additional sampling specifically targeting golf course turf management products or roadway runoff constituents is warranted, such costs will be borne by GMA and/or the golf course operator.

Wetland Enhancement

In addition to proposed compensation for anticipated wetland impacts, the Greylock Center project will establish a cooperative agreement with the GROWetlands initiative under the Massachusetts Wetlands Restoration and Banking Program to restore approximately 6 acres (261,360 square feet) of degraded wetland habitat. Both in conjunction with GROWetlands and the Greylock Center Stewardship Plan, wetland areas that are being colonized by common reed (*Phragmites spp.)* will be subject to invasive species management to restore these wetland areas to a native plant community.

7.4 Water Supply

After a comprehensive water supply alternatives analysis presented in the NPC for Greylock Center, the project proposes to utilize the municipal water supply for golf course irrigation as well as for potable water. The Greylock Center Golf Course has been designed to incorporate drought tolerant grasses in areas of rough, and natural fields between the fairways. With regard to potable water use, Greylock Center buildings will be equipped with water-saving fixtures, and educational information to encourage water conservation will be posted and made available through all public facilities.

7.5 Wastewater

Given current DEP wastewater regulations, the cost of alternative wastewater treatment and disposal systems, and the presence of existing ample and unconstrained sewer infrastructure coupled with the fact that the Adams municipal wastewater treatment plant is operating substantially below its design capacity, the Greylock Center building program will tie into the existing municipal wastewater system. Nonetheless, DEM and GMA will continue to explore the feasibility of constructing alternative wastewater treatment and

disposal systems for discrete facilities. For example, the rustic cabins will be served by composting toilets.

7.6 Agricultural Resources

The Secretary's Certificate on the DEIR required DEM to demonstrate further consultation with the Massachusetts Department of Food and Agriculture (DFA) to ensure that the project conforms with Executive Order 193 (EO 193). Since that time, DEM has negotiated several mitigation commitments that will be implemented through operation of the Greylock Center project. These mitigation commitments have been formalized through a Memorandum of Agreement between DFA, DEM and GMA, and will be implemented in collaboration DFA's Agri-tourism and Agricultural Education programs, respectively.

Summary of Memorandum of Agreement Commitments

While the site plan for the Greylock Center project was being finalized, DEM undertook negotiations with the DFA to establish those mitigation measures, which would adequately and properly conform to the requirements of EO 193. DEM advanced recommendations made in the CET report "Sustainable Development at Greylock Center" which called for the promotion of sustainable agricultural practices on and off site through the establishment of educational programs and demonstration plots. As a result of these negotiations, DFA, DEM and GMA signed a Memorandum of Agreement (MOA) on 8/17/99. The MOA sets forth the following provisions:

- DFA will provide the DEM and GMA with information related to local agriculture and promotion of agri-tourism;
- DFA will coordinate with DEM and GMA in the development of education programs for the Environmental Center;
- DEM and GMA will coordinate with DFA and Greylock Center's education providers to develop educational programs that are applicable to the local region. Information on local agriculture will be included in the curriculum.
- DEM and GMA will establish Greylock Center as a consumer of and outlet for local farm products. Greylock Center menus will utilize locally grown products, and information on these products will appear on the menus.
- DEM, GMA, and DFA will study the feasibility of a farmers' market.
- DEM and GMA will establish a community garden on site at a location determined by GMA.

7.7 Cultural Resources

Although the Massachusetts Historic Commission (MHC) has determined that there are no extant cultural resources which are eligible for listing on the state or national register of historic places, agricultural artifacts exist throughout the Greylock Center property. These artifacts include stone walls which attest to former agricultural use, and a manure tunnel linking the west and east sides of the southerly end of West Mountain Road. These artifacts are important cultural attributes, and will be preserved and maintained though they are not in and of themselves sufficiently intact or unique to qualify for listing in the national or state register of historic places. In addition, under the terms of a Memorandum of Understanding between DEM and MHC, any project which involves earth disturbance requires a Project Notification Form (PNF). A PNF will accordingly be filed by the DEM Office of Cultural Resources.

Mitigation Measures

The Greylock Center Stewardship Plan calls for periodic inspection and maintenance of these structures to ensure that they do not deteriorate beyond their current state. Further, these structures will be subject to inspection and repair as necessary and incorporated into interpretive materials and made available to Greylock Center visitors.

7.8. Traffic

Traffic impacts associated with the Greylock Center project include increased truck and vehicular traffic along local roadways. There is no Massachusetts Highway Department (MHD) jurisdiction over the project, with exception of funding and review authority associated with the Public Works Economic Development (PWED) grant which is being sought for the proposed connector road.

Mitigation Measures

In order to improve site distances at the intersection of West Road and West Mountain Road, minor changes are proposed to the intersection geometry. The duration of off-site construction disturbance will be minimized by combining intersection improvements as part of the water and sewer line installation contract to be constructed during Phase I.

With regard to on-site construction, DEM and GMA will coordinate proposed construction traffic patterns in consultation with the Town of Adams to ensure that all feasible efforts will be made to minimize vehicle trips, and to establish access routes which will involve the least amount of disturbance to Adams residents as possible. As stated in the MEPA documentation for Greylock

Center, the Town will attempt to construct the connector road as expeditiously as possible. Once this roadway is functional, construction traffic seeking access to or from the Greylock Center Village development zone will be required to utilize the connector road and Gould Road, to the extent that such vehicles can be safely accommodated on the connector road bridge.

DEM and GMA's approach toward development of the project is designed to minimize the use of automobiles on the site once the visitor has arrived. Centralized parking areas and shuttle services (as well as the availability of bicycles and other alternatives modes of transportation) will help minimize automobile use.

DEM, GMA and the Greylock Trust will continue to develop strategies to minimize traffic to and within the site, including exploration of the feasibility of off-site parking with shuttle service to the Greylock Center property.

Mitigation Summary

A summary table appended to this Section 61 Finding identifies specific mitigation measures that are to be undertaken by DEM and GMA (and/or their designees and assigns), and the schedule for implementation of each measure, as described further in these Section 61 Findings and in the MEPA documentation for the Greylock Center project.

Findings

Based on the foregoing, the [insert name of state Agency] finds that the impacts of the Greylock Center project are as described in the DEIR, NPC and FEIR. DEM and GMA have committed to numerous measures to minimize unavoidable impacts, as documented in this Section 61 Finding.

Such measures include actions to be taken before, during, and after proposed construction activities associated with the various Greylock Center program components, as summarized above. Implementation of these measures shall be exercised through establishment and enforcement of the Master Lease, and through conditions that may be imposed by local, state and federal authorities within those areas of their applicable permit jurisdiction.

Summary of Mitigation Measures

Mitigation Measure	Implementation Schedule
State-Listed Species	
♦ Water quality monitoring at designated locations	Pre-construction and for a minimum of 5 years thereafter (quarterly sampling)
♦ State-listed plant species monitoring	Annual inspection, ongoing
Existing Vegetative Communities	
♦ Establish Conservation Restriction on undeveloped portions of Greylock Center property	Construction period
♦ Implementation of habitat management program, as identified in Greylock Center Stewardship Plan, e.g., Rotation of mowing; Forest management; and Invasive species management	ongoing
Wetlands, Water Quality and Drainage	
♦ Implementation of erosion and sedimentation control plan for construction activities (NPDES Stormwater Pollution Prevention Plan)	construction period
♦ Water quality monitoring: establish baseline and quarterly sampling	Pre-construction and for a minimum of 5 years thereafter
♦ Stormwater management systems annual inspection/maintenance	Annual maintenance of constructed stormwater BMPs, ongoing
Water Supply	
♦ Use drought resistant grass species and water saving devices in all buildings	Construction
Wastewater	
♦ Use alternative wastewater technology where feasible and appropriate	Pre-construction
Agricultural Resources	
♦ Compliance with MOU with Department of Agriculture	ongoing
Cultural Resources	
♦ Periodic inspection and maintenance of agricultural artifacts	ongoing
Traffic	
♦ Improve intersection geometry at West Road and West Mountain Road	First construction package (concurrent to installation of sewer main beneath West Mountain Road)
♦ Develop construction traffic management plan	Pre-construction
♦ Construct connector road to relieve West Mountain Road	Per PWED schedule
♦ Minimize vehicular use on-site by encouraging alternative modes of transportation and shuttle service	ongoing
♦ Construct connector road to relieve West Mountain Road	Per PWED schedule

8.0 RESPONSE TO COMMENTS ON THE NOTICE OF PROJECT CHANGE

8.1 Approach

Numerous organizations and individuals submitted comments on the Notice of Project Change (NPC) for the Greylock Center Project. As with the DEIR, many of these comments include detailed suggestions to improve upon various elements of the Greylock Center project. DEM and GMA appreciate the interest reflected in these comment letters, and have sought to incorporate suggestions where possible.

Section 8.2 provides responses to comments in the order in which they were identified in the Secretary's Certificate on the NPC and is followed by the actual comment letters. Each comment letter has been assigned a number from 1 to 52. Comments for which responses are provided are identified in the margin of each comment letter, using the assigned number to identify the comment letter and a sub-number (e.g. 1.1, 1.2, 2.1, 2.2, etc) to identify individual comments within each comment letter.

8.2 Responses to Comments

1. Aceto, Thomas (MA College of Liberal Arts)

The Greylock Center team appreciates MCLA's support of the project and interest in sponsoring joint activities.

2. Adams Board of Selectmen

Letter of support. Response not required.

3. Adams Town Administrator

Letter of support. Response not required.

4. Appalachian Mountain Club

4.1 A discussion regarding the proposed Greylock Center project with respect to sustainability issues is presented in Section 2. Economic/fiscal issues are addressed in Section 1.5.

4.2 The conformance of the proposed Greylock Center project with the Master Plan is presented in Section 2.0.

4.3 Table 1-3 provides a summary of project phasing and facilities associated with Phase I and Phase II development, while development-related mitigation measures are presented in Section 6.0. Stormwater management relative to development of the village is addressed in Section 5.2.4 (Phase I) and 5.2.5 (Phase II). With respect to residential housing, proposed units will comply with all applicable permitting requirements. Moreover, residential unit construction will be market-driven. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

4.4 The FEIR Plan reflects further efforts to cluster residential units. For example, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village. A discussion regarding the proposed Greylock Center project with respect to sustainability issues is presented in Section 2.

4.5 Since publication of the NPC, tent camping and the rustic cabins have been consolidated and relocated to the southern portion of the property, such that none of these facilities occurs within any regulated resource area. Moreover, by relocating tent camping areas, these facilities will be more accessible to campers and families with children.

4.6 A stewardship program for the Greylock Center property is presented in Section 6.5, in which it is hoped that AMC will take an active interest.

5. Berkshire Regional Planning Commission

5.1 In response to comments received on the NPC, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village.

5.2 With respect to "sprawling" development patterns, it should be noted that the avoidance of resource impacts constituted a paramount criterion relative to the layout of site facilities, including residential units and other components of the village. As presently proposed, none of the village occurs within wetlands or the riverfront area of perennial streams. Moreover, only a very small portion of the overall village development is located within the 100' wetland buffer zone. The avoidance of these features, however, dictated that requisite program elements be extended along West Mountain Road. Regardless, efforts will continue during final design to further consolidate proposed development.

5.3 The use of municipal water to service the proposed Greylock Center project, including the golf course, is not expected to adversely affect existing conditions at municipal well locations, including base flows to the Hoosic River. Development-related usage is within the capacity of the municipal system, such that no amendment to the Town's groundwater withdrawal permit will be required.

6. Blazejewski, Steve

6.1 As before, project sustainability represents an integral component of the Greylock Center project. A discussion regarding the proposed Greylock Center project with respect to sustainability issues is presented in Section 2. Likewise, from the onset of site planning activities, the protection of environmentally sensitive areas and the avoidance/ minimization of resource impacts also has been of paramount importance. The current site plan reflects these goals/objectives, as evidenced by the limited extent of impacts to wetlands and implementation of a wetland compensation plan, and such other resource protection measures as a comprehensive stormwater management plan, Integrated Pest Management Plan for the golf course, and stewardship plan for the property as a whole.

7. Bresett, Betty

7.1 As stated above, project sustainability represents an integral component of the Greylock Center project. A discussion regarding the proposed Greylock Center project with respect to sustainability issues is presented in Section 2. The protection of environmentally sensitive areas and the avoidance/minimization of resource impacts also has been of paramount importance. The current site plan reflects these goals/objectives, as evidenced by the limited extent of impacts to wetlands and implementation of a wetland compensation plan, and such other resource protection measures as a comprehensive stormwater management plan, Integrated Pest Management Plan for the golf course, and stewardship plan for the property as a whole.

7.2 Also, as stated above, in response to comments received on the NPC, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village.

7.3 Proposed golf facilities, like all proposed features, have been sited to avoid/minimize resource impacts. Relocation of golf holes to lands north of Hoxie Brook is consistent with these efforts. While it is acknowledged that golf holes will occupy areas presently containing upland forested areas, golf hole relocation was necessary to reduce both wetland and riverfront area impacts.

In the former Thiel Farm area, golf holes 10 through 18 will be located in areas presently dominated by old field and forested areas consisting of mixed hardwoods/softwoods and a pine plantation. According to the *Natural Resources at Greylock Center – Inventory and Assessment* (Center for Environmental Technology, 1996), the mixed hardwood/softwood forest consists of "red maple, red spruce, beech, white ash and hemlock. Trees average 11" DBH, indicating a young forest. Hop hornbeam and striped maple are the usual understory. Only at the east base of the ridges are rich woods species seen. At the southmost edge near old fields, some of the largest trees are seen, which probably were isolated trees in former pastures." As further noted by CET with respect to the pine plantation, "The white and red pines were probably planted in the thirties when the Thiel Farm was purchased to be added to the reservation."

As the FEIR Plan indicates, layout of the golf course has avoided bedrock outcrops and, therefore, rock removal requirements to the extent practicable. Additionally, only portions of the forested area in the northeastern portion of the property will be affected by the golf course. Moreover, prior to construction, specimen trees will be identified for preservation and avoided during construction.

As detailed in Sections 5.0, and Sections 6.4 and 6.5, a comprehensive stormwater management program will be implemented during both facility construction and operation, as will an Integrated Pest Management program for the golf course and stewardship plan for the entirety of the site. These measures will ensure the future integrity of Hoxie Brook and other onsite and offsite resources.

7.4 With respect to tent camping and the rustic cabins, these facilities have been consolidated and relocated to the southern portion of the property, such that none of these facilities occurs within any regulated resource area. Moreover, by relocating tent camping areas, these facilities will be more accessible to campers and families with children.

7.5 None of the trailheads are located with the safety areas of any golf holes. As for the trailhead proximate to the village, this site is expected to serve as a focal point from which individual or groups visiting or staying at the village can access the multi-use trail system. Consistent with the plan presented in the NPC, no trail improvements presently are proposed at Pecks Falls. The existing trails at this location will remain accessible, but in an unimproved condition.

With respect to the proposed connector road, its construction and operation is not expected to result in "major" impacts on environmentally sensitive areas, including rare species. Discussions in this regard are presented in Sections 3.0 and 4.0.

8. Browne, Charlie

The project is being advanced in accordance with legislation drafted to assist the regional economy.

9. Carver, David

Letter of support. Response not required.

10. Center for Ecological Technology

10.1 As stated above, project sustainability represents an integral component of the Greylock Center project, including residential unit construction. A discussion regarding the proposed Greylock Center project with respect to sustainability issues is presented in Section 2.

10.2 In response to comments received on the NPC, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village, thereby promoting a more clustered development pattern.

10.3 As stated above, the rustic cabins have been relocated and consolidated with tent camping facilities in the southern portion of the property.

10.4 The proposed connector road is required to establish pedestrian, vehicular and safety access between the central and southern portions of the Greylock Center property. In this regard, the road also provides dual access for police/fire/rescue vehicles to Phase I facilities, including residential units and the Greylock Lodge, as well as Phase II development. Given the time frame for funding, design, approval and construction of the connector road, postponing action on this Phase I program element would compromise human safety.

10.5 The South Knoll Park identified on the Preferred Alternative Plan in the NPC, or Special Events Area as identified on the FEIR Plan, will be subject to low intensity uses. Accordingly, the need for expansive parking areas will not be required, and impacts to this portion of the site from future activities will be minimized.

10.6 As described in the NPC, alternative water supply sources were investigated. Due to concerns regarding potential reductions in stream base flows, and the resultant impacts to rare species and habitats, In this regard, the use of municipal water supplies was deemed most appropriate for the site.

11. Clairmont, Larry

Letter of support. Response not required.

12. Collins, Philip

The host community of the property, the Town of Adams, have repeatedly voiced continued support through a majority vote in various public meetings.

13. Crowe, Stephen (Williamstown Savings Bank)

Letter of support. Response not required.

14. MA Department of Environmental Protection/WERO

14.1 The option to pursue a DEP Groundwater Discharge Permit for some or all of the Greylock Center project is acknowledged. DEP's comment with respect to groundwater discharges associated with alternative wastewater treatment systems also is acknowledged.

14.2 DEP's comment with respect to Water Management Permit requirements, or lack thereof, relative to the use of excess quarry water from Specialty Minerals is acknowledged.

14.3 Each of the recommendations set forth by DEP relative to avoiding/minimizing impacts to riverfront areas has been incorporated into the planning/design of the multi-use trail system and other proposed facilities (see Section 3.4).

15. MA Department of Food and Agriculture

15.1 The proposed Greylock Center project will not adversely affect the horticultural viability of the existing nursery/greenhouses along West Mountain Road. Continued public access to the nursery will be provided throughout both the Phase I and Phase II construction periods.

16. DeRosa, John (For Thomas and Paulette Morin)

16.1 See response to comment 15.1.

16.2 As the FEIR Plan indicates, proposed activities proximate to the Morin property are limited to small segments of the Phase II multi-use trail system, none of which will contain snow-making equipment. Additionally, no roadway or utility work associated with the Greylock Center property is anticipated near this site. Moreover, the practice tee/driving range as depicted on the Master Plan contained in the DEIR has been relocated from the southerly portion of the property to an area immediately south of Gould Road. Further, water service to the proposed project will be provided by municipal supplies, not by onsite wells. Pending further investigations, an existing onsite well may only be used to service the proposed Phase II tent camping/rustic cabin area, located hydrologically down-gradient and approximately 1,200' southeast of the Morin property.

17. MA Division of Fisheries & Wildlife/Natural Heritage & Endangered Species Program

17.1 Riverfront area impacts associated with the Greylock Center project, as well as the rationale for riverfront area encroachments, are described in Section 3.4. Specific calculation of riverfront area impacts are provided in Table 3-2.

17.2 Snowmaking is not expected to adversely affect rare species or native trout populations due to the use of municipal water supplies for this and other purposes, including potable water and golf course irrigation. Accordingly, stream base flows will not be affected by groundwater drawdowns potentially associated with onsite wells. Additionally, since chlorine is not added to municipal water supplies prior to distribution, use of this water supply source will not adversely affect rare species or trout populations.

17.3 A comprehensive Integrated Pest Management Plan has been prepared for the proposed golf course and is introduced in Section 6.4 and reproduced in its entirely as Appendix B. The IPM also addresses the use of pesticides.

17.4 As stated above, chlorine is not added to the Adams municipal water supplies prior to distribution. Consequently, use of this water supply source will not adversely affect rare species or trout populations.

17.5 The proposed connector road bridge will be located approximately 25' above Pecks Brook. While approximately 500 sf of canopy cover will be removed to accommodate bridge construction, the bridge itself also will provide shade to the brook. No temperature-related or other impacts to rare or other species are expected to be associated with this action.

17.6 Potential impacts to Jefferson salamander are described in detail in Section 4.2. No short- or long-term adverse impacts, however, are anticipated.

18. Dobrowolski, Ann

18.1 Economic/fiscal issues relative to the Greylock Center development are presented in Section 1.5.

18.2 See response to comment 17.5.

19. Driscoll, Ed

Letter of support. Response not required.

20. Dubick, James

20.1 Residential housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

20.2 A comprehensive Integrated Pest Management Plan which addresses the use of chemicals in conjunction with the golf course has been prepared and is presented in Section 6.4.

20.3 Since the NPC, the golf course routing plan has been modified, most notably by the relocation of Holes 7, 8 and 9. This action vastly increase access to Mt. Greylock, and existing and proposed trails.

21. Dubis, Kevin

In accordance with the Secretary's Certificate on the NPC, the Environmental Center (Greylock Lodge) will not proceed until MEPA review for the project as a whole has been completed.

22. Gargan, Raymond

Letter of support. Response not required.

23. Goodman, Elisabeth (for Berkshire Natural Resources Council)

23.1 Since publication of the NPC, site plan modifications have been implemented, such that no portion of the proposed project occurs on property owned by Specialty Minerals.

24. Hutchinson, Paul

Letter of support. Response not required.

25. Janik, Stanley and Isabel

Letter of support. Response not required.

26. LaPort, Victor

26.1 The site plan has always maintained the central glen area open to the general public for passive recreational and nature education purposes . The trail system within this areas has been designed to allow adequate distances from golf activities to ensure pedestrian safety. In addition, modifications to the routing plan have improved access to the adjoining trail system to the north of the glen and connections to Mount Greylock State Reservation.

26.2 Several holes among the 'back nine' are located in areas of 'old field', which is, in fact, an area formerly developed for golf holes (see Figure 3-2). Some clearing will be required for the back nine. This forested area, however, is largely comprised of young forest and a pine plantation. DEM's forestry practices include both protection of forest where appropriate, and sound management and harvesting of timber resources.

The proposed multi-family homes along West Mountain Road have been relocated into the Village, and no clearing is proposed in the areas referenced in the comment letter.

26.3 As previously stated, adequate off-sets have been incorporated into the site plan to ensure pedestrian safety on the trail system throughout the golf season. The golf cart path system, which is often very close to golf activity, is not open to the general public during the golf season, but these trails will be open to the public for winter use. With the relocation of Fairway #9, access between the central glen and Mount Greylock State Reservation is improved over the site plan presented in the NPC.

26.4 As previously mentioned, proposed homes along the lower portion of West Mountain Road have been relocated to the Village.

26.5 The extensive and varied natural resources which will remain on the property following development of Greylock Center will provide numerous opportunities for natural resource study in a single location. This variety of 'living classroom' resources will enable the Parks College curriculum to address a number of ecosystems; this diversity uncommonly found in a single location, and provides an efficient means to provide hands-on education addressing several types of resources.

27. Leitch, Mr. And Mrs. Robert

Letter of support. Response not required.

28. Linscott, Heather

The Greylock Center site plan has been designed to cluster buildings, while leaving large expanse of open space for public access. Moreover, to ensure perpetual rights of public access to the Greylock Center property, the majority of the site will be placed under a Conservation Restriction, which will prohibit any development beyond that proposed in this FEIR.

29. LoPresto, Wayne

Letter of support. Response not required.

30. Marchio, Jean

30.1 Since the NPC, the golf course routing plan has been modified, most notably by the relocation of Holes 7, 8 and 9. This action vastly increase access to Mt. Greylock, and existing and proposed trails. Additionally, a trail system will continue to surround the Glen, providing access to trails extending throughout the property.

30.2 As stated above, residential housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

30.3 A discussion regarding the proposed Greylock Center project with respect to sustainability issues is presented in Section 2.

30.4 The proposed connector road is required to establish pedestrian, vehicular and safety access between the central and southern portions of the Greylock Center property. In this regard, the road also provides dual access for police/fire/rescue vehicles to Phase I facilities, including residential units and the Greylock Lodge, as well as Phase II development.

31. MA Association of Conservation Commissions

Response not required.

32. MA Audubon Society

Response not required.

33. MA Audubon Society

33.1 In the former Thiel Farm area, golf holes 10 through 18 will be located in areas presently dominated by old field and young forests consisting of mixed hardwoods/softwoods and a pine plantation. According to the Natural Resources at Greylock Center – Inventory and Assessment (Center for Environmental Technology, 1996), the mixed hardwood/softwood forest consists of "red maple, red spruce, beech, white ash and hemlock. Trees average 11" DBH, indicating a young forest. Hop hornbeam and striped maple are the usual understory. ... Only at the east base of the ridges are rich woods species seen. ... At the southmost edge near old fields, some of the largest trees are seen, which probably were isolated trees in former pastures." As further noted by CET with respect to the pine plantation, "The white and red pines were probably planted in the thirties when the Thiel Farm was purchased to be added to the reservation."

As the FEIR Plan indicates, layout of the golf course has avoided bedrock outcrops and, therefore, minimizes rock removal requirements to the extent practicable. Additionally, only portions of the forested area in the northeastern portion of the property will be affected by the golf course. Moreover, prior to construction, specimen trees will be identified for preservation and avoided during construction.

33.2 In response to comments on the NPC, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village, thereby promoting a more clustered development pattern.

34. MA Audubon Society

34.1 DEM is committed to incorporating sustainable technologies into the Greylock Center project. A discussion regarding sustainability issues is presented in Section 2.

34.2 As noted in the NPC, and in accordance with the Secretary's Certificate on the DEIR, DEM distributed information pertaining to financial aspects of the Greylock Center project to commenters requesting this documentation. A copy of this information is available from DEM upon request.

Economic/fiscal issues are addressed in Section 1.5 of this FEIR. As stated in response to previous comments, residential housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

34.3 As stated above, DEM distributed information pertaining to financial aspects of the Greylock Center project to commenters requesting this documentation. A copy of this information is available from DEM upon request. Economic/fiscal issues are addressed in Section 1.5 of this FEIR.

34.4 With respect to residential unit construction, housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

34.5 See response to comment 34.1.

34.6 Compliance with Chapter 676 of the legislative Acts of 1985, as well as the subsequently prepared Master Plan, constitutes the paramount project goals/objective. In this regard, project components were described in Section 1.0 of the DEIR, in the NPC and in Section 1.0 of this FEIR. In summary, these goals/objectives pertain to ecological and economic sustainability, as well as educational and recreational initiatives. As presented in Section 1.3 of the DEIR, as well as in the Master Plan, the following mission statement has been developed for the project:

> *Greylock Center will be a recreational and educational facility created by joint public and private undertaking, providing economic benefits to the Berkshires in a manner that stresses environmental awareness and sensitivity of design, development, and operation. Greylock Center is intended to exemplify a sustainable approach to development, protecting the natural environment both of the site and the neighboring Mount Greylock State Reservation and demonstrating that sustainable approaches to development are good (profitable) for business as well as being good business.*

The project's compliance with the Master Plan is described in Section 2.0 of this FEIR.

34.7 A no-housing alternative, in essence has been considered. As described above, housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

34.8 Of the 1,063 acre property, 790 acres (approximately 74% of the site) will be permanently protected for open space and wildlife habitat purposes under a Conservation Restriction to be granted to the Town of Adams Conservation Commission, as further described in Section 2.4. Figure 1-2 identifies the footprint of areas that will be left largely undeveloped. In that it is recognized that recreational activities and natural resources/wildlife habitat management are often not compatible uses, a Stewardship Plan has been developed for the property, which recognizes particularly sensitive resources and habitats, and limits public access to such areas. This Stewardship Plan is introduced in Section 6, and appears in its entirely in Appendix A.

34.9 Consistent with project goals/objectives, the proposed Greylock Center project has established linkages with the Mt. Greylock Reservation and Town of Adams from an economic, ecological, recreational and educational perspective. Throughout the final design process and beyond, efforts will continue to further solidify these linkages.

34.10 As noted in Section 2.6.2, and as required in the Master Plan, GMA and DEM have strived to minimize visual impacts of the proposed development. The view of the village from the summit of Mt. Greylock is a paramount concern to both GMA and DEM. To assess the visual impact of the proposed village on the view from the summit of Mt. Greylock a visual assessment was commissioned by DEM. According to the visual analysis, no part of the village site can be seen from the Summit Centennial Commemorative viewing area. From the tower on the summit, a portion of the site is visible. From the Adams Overlook viewing area, the majority of the site is visible. GMA and DEM will continue to monitor the visual impacts of the development and modify the design to reduce negative visual impacts. In addition, no part of the village is visible from the main street in downtown Adams, or from any point on West Road.

GMA is also committed to minimizing other visual impacts such as utility lines and will provide new underground utility lines as well as bury existing above ground lines wherever feasible and compatible with the schedule of the phased project. Finally, GMA is required to minimize the amount of night lighting in order to reduce light pollution upon the dramatic night skies in the Berkshires. As stipulated in the Master Plan, GMA will propose a minimal amount of night lighting for public safety and position light fixtures close to the ground to minimize eye glare.

34.11 Water use relative to both potable and snow-making supplies is addressed in Section 1.2.5 and Appendix C. With respect to the use of municipal water supplies, the quantities required for the proposed Greylock Center project are within the allowable volumes of the Town's DEP-issued withdrawal permit.

34.12 Up to 50 residential units will be constructed during Phase I, with up to an additional 250 units to be constructed during Phase II. These units will consist of both single-family and multi-family units.

34.13 See response to comment 34.10

34.14 As described above, 790 acres (approximately 74% of the site) will be permanently protected for open space and wildlife habitat purposes under a Conservation Restriction to be granted to the Town of Adams Conservation Commission. These lands will remain open for use by the public. Additionally, the entirety of the golf course also will be available for public use during the winter season. Accordingly, the overwhelming majority of the site will remain accessible to the public.

34.15 Fiscal/economic impacts with respect to Northern Berkshire County are addressed in Section 1.5.

34.16 Fiscal/economic issues are addressed in Section 1.5.

34.17 Fiscal/economic issues are addressed in Section 1.5.

34.18 As stated above, housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

34.19 Consistent with the Secretary's Certificate on the ENF, an analysis of the No-Build Alternative was presented in Section 2.6 of the DEIR.

34.20 As proposed, the Greylock Center project will markedly increase recreational opportunities onsite, providing expanded facilities with respect to the multi-use trail system, and a new golf course. While currently used throughout the year, use opportunities will be enhanced by proposed recreational facilities.

34.21 Stormwater management, including the inclusion of Best Management Practices, is described in Section 5.0. These facilities will be refined during the final design process, and incorporated into future permit applications, including the Notice(s) of Intent to be filed with the Adams Conservation Commission.

34.22 Field investigation involving the delineation of wetlands was initiated early in the site planning process. Given the size of the property, however, the actual onsite delineation and associated agency confirmation of wetland boundaries involved a protracted period. Coincidentally, preliminary development plans were being prepared to determine the layout for program elements that, to the extent practicable, would avoid/minimize impacts. As wetland and other

information was generated, development plans were refined to reflect this new information. The proposed site plan set forth in this FEIR reflects this collective database.

34.23 All wetlands associated with Hoxie Brook in the vicinity of the proposed golf course have been confirmed by the Adams Conservation Commission (ACC) and U.S. Army Corps of Engineers. Proposed activities along Hoxie Brook outside the 'Area of Determination' only occur in conjunction with one proposed trail crossing (i.e. Crossing 57). With respect to Hoxie Brook, it is this limited area that will be subject to further review by the ACC.

34.24 The proposed Parks College and the rationale for its location within the proposed Greylock Center development is addressed in Section 1.4.3.3 of the NPC.

34.25 The proposed connector road is required to establish pedestrian, vehicular and safety access between the central and southern portions of the Greylock Center property. In this regard, the road also provides dual access for police/fire/rescue vehicles to Phase I facilities, including residential units and the Greylock Lodge, as well as Phase II development. Given the need for this roadway, alternative alignments were reviewed, with the selected alignment determined to result in the least impact to riverfront area and other wetland resources.

Riverfront area impacts associated with the Greylock Center project, as well as the rationale for riverfront area encroachments, are described in Section 3.4. As stated therein, during the 3-1/2 year site planning/design development process, numerous modifications were made to the trail system. Since the filing of the NPC, trails alignments continued to be refined to further reduce the number of wetland crossings and the extent of encroachment into RFA. In this regard, the trail system has been revised to reduce the number of wetland/RFA crossings proposed in this FEIR as compared with the site plans presented in the DEIR and NPC.

However, trail system planning was based on the underlying principle of providing user access throughout the property (as is currently taking place in an unregulated manner) and enabling trail user exposure to the diverse natural features exhibited onsite for environmental education. To accomplish this goal/objective, it was necessary to site waterway/wetland/RFA trail crossings at selected locations. These encroachments reflect varied skill levels, as well as differing levels of 'wilderness' experience.

35 Moncecchi, Alita

The Early Action waiver request was not granted, and while fiscal analyses are not within MEPA jurisdiction, a fiscal analysis of Phase I is provided in Section 1.5, and other reports pertaining to economic issues are available upon request.

36 Moncecchi, Mike

36.1 Proposed municipal water withdrawals to service the Greylock Center project are within the allowable limits as permitted by DEP. With respect to the golf course, layout of the golf course has avoided bedrock outcrops and, therefore, rock removal requirements have been minimized to the extent practicable.

36.2 The residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village, thereby promoting a more clustered development pattern.

37. Moncecchi, William

See response to comment 36.1 and 36.2.

38. Nowak, Joseph

38.1 The proposed Greylock Center project is consistent with Chapter 676 of the Acts of 1985. This State legislative action specifically authorized DEM to purchase the site for "general recreational purposes and for the development of those residential and commercial facilities and improvements thereon which the commissioner deems appropriate for the successful realization of said recreational purposes." The full text of Chapter 676 in provided in Appendix A of the DEIR.

39. Noyes, Nick and Leslie

39.1 In response to comments on the NPC, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village, thereby promoting a more clustered development pattern.

39.2 Economic/fiscal issues are addressed in Section 1.5. With respect to residential unit construction, housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

40. Northern Berkshire Chamber of Commerce

Letter of support. Response not required.

41. O'Brien, Nancy

41.1 The avoidance of resource impacts constituted a paramount criterion relative to the layout of site facilities, including residential units and other components of the village. As presently proposed, none of the village occurs within wetlands or the riverfront area of perennial streams. Moreover, only a very small portion of the overall village development is located within the 100' wetland buffer zone. The avoidance of these features, however, dictated that requisite program elements be extended along West Mountain Road. Regardless, efforts will continue during final design to further consolidate proposed development. In this regard, it should be noted that, as currently proposed, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village, thereby promoting a more clustered development pattern.

41.2 As the FEIR Plan indicates, layout of the golf course has avoided bedrock outcrops and, therefore, rock removal requirements have been minimized to the extent practicable. Additionally, only portions of the forested area in the northeastern portion of the property will be affected by the golf course. Moreover, prior to construction, specimen trees will be identified for preservation and avoided during construction.

42. Phelps, Mason

42.1 With respect to the number of housing units to be constructed, residential housing associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

42.2 A discussion regarding sustainability issues is presented in Section 2.

42.3 The South Knoll Park identified on the Preferred Alternative Plan in the NPC, or Special Events Area as identified on the FEIR Plan, will be subject to low intensity uses. Accordingly, the need for expansive parking areas will not be required, and impacts to this portion of the site from future activities will be minimized.

42.4 Trail crossings 4a, 4b and 4c have been eliminated.

42.5 All trails on Specialty Minerals property have been eliminated.

42.6 As described in Section 3.3.3 of the FEIR, the area of delineated wetland to be disturbed at Crossing 5a totals approximately 2,045 SF. This includes 450 SF of currently vegetated wetland and 1,595 SF of an existing dirt road that was incorporated into the wetland delineation and approved by the Adams Conservation Commission.

While included in the delineation as a bordering vegetated wetland, the dirt road does not play a role relative to the interests of the MA WPA for which bordering vegetated wetlands are presumed significant. Consequently, this crossing is not proposed to be bridged.

42.7 Wetlands in the vicinity of Crossing 16a were outside the area of the original delineation. Since that time, these wetlands have been delineated and are shown on the FEIR Plan. Once delineated, Crossing 16a was relocated to avoid impacts to wetlands.

42.8 Crossing 11 as contained in Table 2-1 of the NPC should, indeed, have been cited as "11a".

42.9 During the site planning/design development process, numerous modifications were made to the trail system. Since the filing of the NPC, trails alignments continued to be refined to further reduce the number of wetland crossings and the extent of encroachment into RFA. In this regard, the trail system has been revised to reduce the number of wetland/RFA crossings proposed in this FEIR as compared with the site plans presented in the DEIR and NPC.

As stated above, however, trail system planning was based on the underlying principle of providing user access throughout the property and enabling trail user exposure to the diverse natural features exhibited onsite. To accomplish this goal/objective, it was necessary to site waterway/wetland/RFA trail crossings at selected locations. These encroachments reflect varied skill levels, as well as differing levels of 'wilderness' experience.

42.10 Since publication of the NPC, tent camping and the rustic cabins have been consolidated and relocated to the southern portion of the property, such that none of these facilities occurs within any regulated resource area. Moreover, by relocating tent camping areas, these facilities will be more accessible to campers and families with children.

42.11 The comment's reference to "a number of small rectangular exclusions" located in the southeastern part of the plan is unclear. Accordingly, no response is provided. However, DEM may be contacted to dscuss and further clarification.

42.12 The black line centered on Pecks Brook south of the Gould Farm indicates the limits of the wetland delineation reviewed by the Adams Conservation Commission (ACC) and U.S. Army Corps of Engineers (ACOE). In other words, while wetlands were delineated between Pecks Brook and the Gould Farm property boundary, they were not reviewed/confirmed by either the ACC or ACOE. The black irregular lines paralleling the perennial stream immediately south of the Gould Farm represent the wetland boundary.

42.13 In the event chlorine or other treatment is added to the municipal water supply, the specific treatment will be reviewed and corrective action(s) taken, if required.

43. Post Card Form Letter

Letter of support for Nature's Classroom.

44. Scully, Caroline

44.1 Since the NPC, the golf course routing plan has been modified, most notably by the relocation of Holes 7, 8 and 9. This action vastly increase access to Mt. Greylock, and existing and proposed trails. The rationale and impacts associated with proposed golf holes north of Hoxie Brook is provided in the response to comment 41.2.

With respect to development along West Mountain Road, the avoidance of resource impacts constituted a paramount criterion relative to the layout of site facilities, including residential units and other components of the village. As presently proposed, none of the village occurs within wetlands or the riverfront area of perennial streams. Moreover, only a very small portion of the overall village development is located within the 100' wetland buffer zone. The avoidance of these features, however, dictated that requisite program elements be extended along West Mountain Road. Regardless, efforts will continue during final design to further consolidate proposed development. In this regard, it should be noted that, as currently proposed, the residential units along West Mountain Road near the entrance to the Greylock Center property have been relocated into the village, thereby promoting a more clustered development pattern.

45. Senator Nuciforo, Jr.

Letter of support. Response not required.

46. Shaw, Frank and Helen

46.1 See response to comment 44.1, 2nd paragraph.

47. Sierra Club

47.1 With respect to the golf course, see response to comment 41.2.

47.2 With respect to housing, units associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

47.3 Since the NPC, the golf course routing plan has been modified, most notably by the relocation of Holes 7, 8 and 9. This action vastly increase access to Mt. Greylock, and existing and proposed trails.

47.4 Since publication of the NPC, tent camping and the rustic cabins have been consolidated and relocated to the southern portion of the property, such that none of these facilities occurs within any regulated resource area. Moreover, by relocating tent camping areas, these facilities will be more accessible to campers and families with children.

48. Sniezek, Pauline and Leonard

Letter of support. Response not required.

49. Trimarchi, John

The Greylock Center site plan has been designed to preserve the majority of the site as open space. This largely undeveloped land will furthermore be managed to protect and enhance significant natural resources, as described in the Greylock Center Stewardship Plan contained in Appendix A.

50. Trimarchi, John

50.1 Since publication of the NPC, site plan modifications have been implemented, such that no portion of the proposed Greylock Center project occurs on properties owned by Specialty Minerals.

51. Weatherbee, Pamela

51.1 The inclusion of housing in the Greylock Center project is consistent with Chapter 676 of the Acts of 1985. This State legislative action specifically authorized DEM to purchase the site for "general recreational purposes and for the development of those residential and commercial facilities and improvements thereon which the commissioner deems appropriate for the successful realization of said recreational purposes." The full text of Chapter 676 is provided in Appendix A of the DEIR. Residential units associated with Phase I and Phase II development will be market-driven, up to a maximum of 300 units. Consequently, if the full demand for housing is not realized, the total number of proposed units will not be constructed.

51.2 Since publication of the NPC, tent camping and the rustic cabins have been consolidated and relocated to the southern portion of the property, such that none of these facilities occurs within any regulated resource area. Moreover, by relocating tent camping areas, these facilities will be more accessible to campers and families with children.

51.3 Since the NPC, the golf course routing plan has been modified, most notably by the relocation of Holes 7, 8 and 9. This action vastly increases access to Mt. Greylock, and existing and proposed trails. Additionally, a trail system will continue to surround the Glen, providing access to trails extending throughout the property.

In the former Thiel Farm area, golf holes 10 through 18 will be located in areas presently dominated by old field and young forests consisting of mixed hardwoods/softwoods and a pine plantation. As the FEIR site plan indicates, layout of the golf course has avoided bedrock outcrops and, therefore, limits rock removal to the extent practicable. Additionally, only portions of the forested area in the northeastern portion of the property will be affected by the golf course. Moreover, prior to construction, specimen trees will be identified for preservation and avoided during construction.

52. Wojtaszek, Mary Ann

52.1 A number of modifications to the site plan have been made at various points to reflect public input and/or in response to new information (such as updated wetlands mapping). The FEIR site plan has made considerable strides in achieving a balance between the economic objectives of Chapter 676, while balancing protection of particularly significant site resources, and the overall footprint of development is considerably more clustered than in the ENF, DEIR and NPC.

Modifications to the routing plan (relocation of Hole #9 in particular) have improved access and connections between the central glen and Mount Greylock State Reservation. Moreover, housing will only be constructed based upon market demand. If there is no demand, no housing will be constructed.

COMMENT LETTERS

DF

Massachusetts College
OF LIBERAL ARTS

Office of the President

October 5, 1999 1

RECEIVED
OCT 08 1999
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Dear Secretary Durand,

As President of MCLA I am always interested in projects that provide opportunities for our students to expand their knowledge of the environment. It is evident from the information provided to me that the Greylock Center Project in Adams Massachusetts would not only enhance the Northern Berkshire region but would also provide an alternative classroom for the students at the College.

We would therefore like to reaffirm our continued support of this important. environmentally sound and sustainable project. We believe the developer has addressed the issues in the Notice of Project Change report (EOEA #11083) and addresses the public concerns regarding preferred alternatives, wetlands, groundwater exploration and the consolidation of the golf course.

We urge you to continue to support this project which will promote economic development, provide academic opportunities for our students, and will maintain the highest standard of design and construction that will protect our natural and cultural resources.

Sincerely,

Thomas D. Aceto
President

Formerly North Adams State College

375 Church Street • North Adams • Massachusetts • 01247-4100 • Telephone: 413-662-5201 • Fax: 413-662-5580
email: taceto@mcla.mass.edu

Town of Adams · Massachusetts 01220-2087

OFFICE OF THE SELECTMEN

Meetings: Wednesday evenings 7:00 o'clock
TOWN HALL BUILDING
8 PARK STREET
TEL. (413) 743-8300
FAX (413) 743-8316

October 6, 1999

2

Mr. Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Subject: Greylock Center, Adams, MA (EOEA No. 11083)
Notice of Project Change

Dear Secretary Durand:

While it would be redundant to simply restate our support of the Greylock Center Plans, we wish to reiterate several points. First, the vast majority of Town residents fully support this plan and the Selectmen have continuously expressed their unanimous support. We are enclosing copies of the last five Town meeting votes that also indicate this overwhelming support.

We believe that the Environmental Education components are integral to the success of the entire project. Parents and school personnel have raved about Dr. John Santos' program, "Natures Classroom." It is truly a wonderful program. This Board is also very excited about the "Berkshire Institute." Several Town Officials met with their Board of Directors and we are very excited to bring the prestige of their institutions (Yale Virginia Tech and U-Mass) to this project and our Town. These two components will contribute greatly to the concept of sustainability. That is why the Adams Board of Selectmen urges you to approve of the "early action" and allow the Greylock Lodge to proceed as soon as possible.

Thank you for the chance to comment on this project. This Town plans to rebuild itself with the identity of "Sustainable Technology." The legislators who created Ch. 676 understood the need to rebuild our economic base. They understood that it was so urgent that they attached an emergency preamble to the bill. Now, 15 years later, with our population decreased by 1000 more residents who have left for greater opportunities, the urgency remains.

Please follow the will of the people of the Town of Adams, who through their Town Meeting, support this plan, and through their Board of Selectmen show support for this plan. We ask you to approve the early action steps and to stay involved to help us make Greylock Center the special place that it should be.

Sincerely,

Edward J. Driscoll

Joseph L. Dean, Jr.

Mark Tolland

Maria D. Wilk

BOARD OF SELECTMEN

Adams Corporate Park EOA and will benefit significantly from its inclusion in said EOA; (2) will not over burden the Town's municipal services, infrastructure and utilities servicing the EOA; (3) will increase employment opportunities for residents of Adams and the Northern Berkshire County Economic Target Area (ETA), thereby reducing blight, economic depression, and reliance on public assistance; and (4) will be designated as a certified project for a term of up to ten years.

Article 25 To see if the Town will vote (A) to approve the Project Certification Application, submitted by Greylock Management Associates, LP, on May 13, 1999, for the facility located within the Greylock Glen Economic Opportunity Area (EOA); (B) to approve the form of the Tax Incremental Financing (TIF) Agreement between the Town of Adams and Greylock Management Associates, LP, and the corresponding TIF Plan, draft copies of which, subject to change, are on file with the Town Clerk; and (C) to confirm that the proposed project (1) is consistent with the goals of the Greylock Glen EOA and will benefit significantly from its inclusion in said EOA; (2) will not overburden the Town's municipal services, infrastructure and utilities servicing the EOA; (3) will increase employment opportunities for residents of Adams and the Northern Berkshire County Economic Target Area (ETA), thereby reducing blight, economic depression, and reliance on public assistance; and (4) will be designated as a certified project for a term of up to twenty years, or take any other action in relation thereto.

Vote: A majority of the Town Meeting Members present voted to approve this article as written.

Article 26 To see if the Town will vote to raise and appropriate, or appropriate from available funds, a sum of money to be expended by the Town Administrator for the repair and alteration of the tank(s), cleanup or mitigation of releases, if any, and for professional services as they pertain to a reported release as defined by the Massachusetts Contingency Plan at the Town Highway Garage and for compliance with Section 38 of Chapter 148 of the General Laws, as amended, or take any other action in relation thereto.

Vote: The Town Meeting Members present voted unanimously to appropriate from the Reserved for Contingency Account the sum of $400,000 to be expended by the Town Administrator for the repair and alteration of the tank(s), cleanup or mitigation of releases, if any, and for professional services as they pertain to a reported release as defined by the Massachusetts Contingency Plan at the Town Highway Garage and for compliance with Section 38 of Chapter 148 of the General Laws, as amended.

ATTEST: A TRUE COPY:
TOWN CLERK
ADAMS, MA

DF

Town of Adams · Massachusetts 01220-2087

JAMES J. LEITCH
TOWN ADMINISTRATOR

TOWN HALL - 8 PARK STREET
TEL. (413) 743-8300
FAX (413) 743-8316
E-mail: jleitch@town.adams.ma.us

October 6, 1999 3

OCT 08 1999

Mr. Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Subject: Greylock Center, Adams, MA
EOEA No. 11083
Notice of Project Change

Dear Secretary Durand:

Please permit me this opportunity to comment on the Notice of Project Change, dated August 1999, for the proposed Greylock Center project.

The evolution of this project's site plan over the past three years has been a direct reflection of public comment and the changes since the Draft Environmental Impact Report have been dramatic. The hotel and conference center and mountain cottages have been relocated to the village, the golf clubhouse has been relocated to the center of the site, the project is no longer dependant upon on-site water supply and waste disposal, and golf course routing has been completely reconfigured. The number of stream crossings has been reduced from 76 to 34 in Phase I and 13 in Phase II, fewer than 5,000 square feet of boardering vegetated wetlands will be impacted by the full development.

It is difficult to recall any project as responsive to public comment and environmental interests, as this one. It is a model of the MEPA process at work and the benefits of public comment. The Department of Environmental Management and Greylock Management Associates should be commended for their willingness to listen and flexibility.

It seems, however, that some seek to use the MEPA process to control every detail of the project. It should be noted that this project must also obtain Special Permit and Site Plan approvals from the Adams Planning Board. There is growing concern that the specificity being required of this project by the MEPA process may eliminate the flexibility that may be needed to be responsive to issues that may be raised during the local permitting process. You may be assured that the five members of the Adams Planning Board, with more than 65 years of collective experience on the board, will be able to address the concerns and needs of the community.

In 1992, the Board of Selectmen adopted a resolution establishing a policy that Adams work toward becoming a sustainable community. Its is our belief that the Greylock Center Project should be viewed in the context of the entire community when considering sustainable development alternatives. The analysis contained in the Notice of Project Change, which resulted in selecting municipal water and sewer services, is a good example of weighing the merits of community interests with those of the site.

This project clearly shares many objectives that you have indicated as priorities, Environmental Education, Community Preservation, and Bio-diversity. It presents the opportunity to set new standards for development, offers exceptional environmental education for our youth, and stands to benefit the entire state park system through programming such as the Parks College. Of particular importance is the Greylock Lodge component which is subject to the early action waiver. There is virtually no environmental impacts which should preclude the approval and there are many reasons in support of it. The most significant of which is stewardship of site and the many educational opportunities associated with applying the principals of sustainability during construction.

The importance of this project can not be overstated. Chapter 676 was enacted in 1985 with an emergency preamble because of the regions critical economic situation. Adams has continued to suffer with a declining population and eroding tax base during the past fifteen years of inactivity. Poverty is no friend of the environment!

Respectfully,

James J. Leitch

OF

Appalachian Mountain Club

October 7, 1999

4

10-13-99A11:07 RCVD

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit
100 Cambridge St.
Boston, MA 02202

RECEIVED
OCT 13 1999
MEPA

Re: Greylock Center, Adams, MA. EOEA # 11083

Dear Secretary Durand:

On behalf of more than 30,000 AMC members who live in Massachusetts and the thousands of AMC members who live in other states and regularly visit the Mount Greylock State Reservation, I am writing to urge you to not grant the request for an Early Action for Greylock Lodge. In addition, I am submitting other comments on the Greylock Center Notice of Project Change (NPC), which fails to demonstrate that the project will adequately protect the environment and provide a sustainable source of jobs and income for the community.

The NPC does not provide specific plans to ensure the long-term environmental and economic sustainability of the project.

4.1 The NPC fails to address how environmental and economic sustainability will be achieved. While it references a "CET sustainability strategy" there are no details describing this strategy or special aspects of the proposed development that make it environmentally or economically sustainable. We urge you to require a detailed plan describing what the project developer will do to ensure long-term economic and environmental sustainability at the site. The sustainability plan should address the specific actions to be taken regarding energy use, waste disposal, land-use impacts, water use, air quality, environmentally sound construction materials and techniques, education and interpretation programs. The sustainability plan should also identify the ways in which the project will promote job creation and training as well as providing a financial analysis detailing how the project will provide a positive economic return to the community of Adams over time.

The Greylock proposal exceeds development parameters agreed to in the Project Master Plan.

The development plans proposed in the NPC far exceed the development parameters approved in the Project Master Plan adopted by the Greylock Center Advisory Committee in February 1996. This was an inclusive and thoughtful community based process that produced high quality results. The master plan should be the defining

document for the project. The added components of the development have no connection to a sustainability concept or plan. As a result of the re-design and relocation of the hosing component new roads are required which were not included in the Project Master Plan. Also, the latest siting of the golf course includes plans to dynamite bedrock and thus to permanently alter the lay of the land, in order to create fairways. This also can not be considered as adding to the environmental sustainability of the site.

4.2 The final EIR should require the proposal to comply with the Project Master Plan and clearly demonstrate how each aspect of the project fits into an overall effort to make the project environmentally and economically sound for the community.

The NPC does not adequately address the environmental impacts of the proposed village development.

The NPC continues to present very little assessment of the environmental impacts resulting from the proposed village development. The final report should detail view-shed impacts of the project for visitors to the summit of Mt. Greylock. It should predict the environmental impacts resulting from the phased construction approach and propose mitigation strategies. The FEIR should also analyze changes in water run-off resulting from the proposed village development.

4.3 In addition, the FEIR should include an examination of several alternatives for the village development. The FEIR should assess a scaled back village proposal without the golf course and housing units and one that would only include the environmental education center and a network of trails.

The Project Master plan approved by the Greylock Glen Advisory Committee states that residential housing will be allowed as long as it meets the environmental, programmatic, and economic benefit criteria laid out in the plan. As with the DEIR, the NPC does not provide any documentation demonstrating how the proposed residential units, second homes and commercial center will meet these important criteria. Nor does the DEIR or the NPC outline how these components will provide ongoing sustainable contributions to the town of Adams. These analyses should be required in the FEIR.

No work should begin on the Environmental Education Center until the entire Greylock Center project has been reviewed and acted on by EOEA.

The developer has proposed to begin construction of the Environmental Education center before the EIR process is complete. The size and scope of this 30,000 square foot development will have significant environmental impacts. The impacts from the Center should not be examined as a separate aspect of the project, but be included in the assessment of the development proposal as a whole.

Since this is public land held under the auspices of the Department of Environmental Management and since it abuts the oldest and most impressive of the state parks, the highest standard of environmental review is necessary before any of the pieces of the project begin. In addition, we have several issues with the Early Action Waiver which are not addressed.

Although the Request for an Early Action Waiver states that the land to be cleared is only three acres, the Greylock Lodge also involves roads and parking. Part of the plan, including the back of one of the buildings comes very close to the wetlands buffer. The Early Action Waiver also involves a road widening. Although safety is given as the reason, it is not explained. An analysis needs to be done to define to what extent widening the road is necessary for this piece of the project.

A fundamental element of the Greylock Center project has been sustainability. There are many unanswered questions about how the Greylock Lodge will be built as a sustainable building with minimal impact on resources. So far, two key elements of sustainability, the re-use of gray water and alternative methods of sewage treatment have been abandoned. Water conservation has been mentioned in the NPC, but the technologies and approaches used to ensure such conservation are not described. We oppose issuance of the early action waiver until more of the questions about the technology that will be integrated into the building.

A number of important relocations have been added to the NPC without explanation:

4.4 The Notice of Project Change is supposed to outline relocations from the Draft Environmental Impact Report. However, fifty houses have been moved to various sites around Greylock Lodge and the clustered village. None of these homes are clustered and have the look of a sub-division. In addition, new roads appear on the map to provide access to these houses. Since Phase One calls for the construction of fifty houses, AMC is concerned that this kind of sprawling sub-division will be the legacy of the Greylock Center. These homes are set into the landscape in a way that has not been justified environmentally and no evidence is provided to demonstrate how this housing will be designed or built based on environmentally sustainable principles or technologies.

4.5 An appropriate component of this project is its public recreational offerings. The preferred alternative moves rustic cabins to an inappropriately steep ledge. To build the cabins (even if they are shelters) in this spot could disrupt thin soils and add to erosion. The tent sites have also been moved to relatively steep areas. The elements which provide relatively low impact (and low cost) recreational opportunities to individuals and families should be central to the project's implementation. Instead, they appear to be shuffled about to make way for a large golf course or for second homes. These opportunities need to valued and need the infrastructure to provide for simple but basic needs.

Public Access and Recreation:

The enabling legislation for the purchase of Greylock Glen mandated the creation of a regional economic development and recreational facility to be realized through a public/private partnership. Although the current plans for the golf course stay clear of wetlands, the golf course, as proposed in the Notice of Project Change extends well past Hoxie Brook to the far end of the Glen, thus severely limiting the remaining public land. Six months of the year (or more depending on the weather), the center swath of the Glen will be available almost exclusively to golfers. In addition to limiting public access, the proponent proposes to use town water to irrigate the golf course. The proponent also will have to use dynamite to create some of the fairways. These actions do not reflect either environmental awareness nor do they reflect a sustainable project.

Golfers, paying high fees, will take precedence over other less environmentally exacting recreation, such as hiking, strolling, birding or mountain biking. These more passive forms of recreation link the Glen with Mount Greylock. These forms of recreation should be central features of the Greylock Center project. They are low impact and sustainable over time with minimal long term impacts on the landscape. In addition, the passive recreationists are more likely to venture into town in search of food, lodging and gear.

.6 **The NPC does not address central issues of stewardship and land management:** The AMC is eager to see improved stewardship at Greylock Glen and we are pleased with the education programming that has been going on in the Glen over the past few summers as provided by DEM, AMC, CET and Nature's Classroom. This aspect of the early action process is becoming an integral part of linking Greylock Glen to the town of Adams and its residents.

The Notice of Project Change does not address how the public will interact with the Greylock Center. It does not provide a plan for how new trails will be maintained or how the land will be managed. These are central aspects of any public land acquisition. GMA has a key role in ensuring that the stewardship of the land is on-going. This includes provisions for management, signage, trash removal, sanitary facilities, maintenance of trails and visitor information.

Thank you for your time and interest in the Greylock Glen and for reviewing the proposed development with the long-term health of the surrounding environment and economy in mind.

Sincerely,

Ruth Dinerman
Conservation Advocate

CC: Governor Paul Celucci
Senator Andrea Nuciforo
Commissioner Peter Webber
Nancy Nylen, CET

BERKSHIRE REGIONAL PLANNING COMMISSION
33 DUNHAM MALL, PITTSFIELD, MA 01201-6207
TELEPHONE (413) 442-1521 • FAX (413) 442-1523

OF

THOMAS D. McCANN, Chair
LOIS A. LENEHAN, Vice-Chair
FREDA BENNETT, Clerk
B. CARTER WHITE, Treasurer

NATHANIEL W. KARNS, A.I.C.P.
Executive Director

5

RECEIVED
OCT 12 1999
MEPA

October 7, 1999

Bob Durand, Secretary
EOEA, Attention: MEPA Office
Dick Foster, EOEA # 11083
100 Cambridge Street - 20th Floor
Boston, MA 02202

RE: Greylock Center, Notice of Project Change
EOEA #11083

Dear Secretary Durand:

Enclosed are the Berkshire Regional Planning Commission's (BRPC) comments concerning the Notice of Project Change for the Greylock Center Project. These comments were endorsed by the BRPC Executive Committee on October 6, 1999.

If we can be of further assistance in this matter, please feel free to call.

Sincerely,

Nathaniel W. Karns, AICP
Executive Director

Attachment

cc: David Rhinemiller, BRPC Delegate
Sandra Moderski, BRPC Alternate
James Leitch, Town Administrator
Adams Board of Selectmen

Berkshire Regional Planning Commission
Executive Committee Meeting, October 6, 1999

PROJECT/ISSUE:	**GREYLOCK CENTER**
REVIEW:	**NOTICE OF PROJECT CHANGE (NPC)**
ID:	**EOEA# 11083**
LOCATION:	**OFF WEST MOUNTAIN AND GOULD ROADS - ADAMS, MA**
APPLICANT/PROPONENT:	**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL MANAGEMENT with GREYLOCK MANAGEMENT ASSOCIATES**
COMMENTS DUE:	**October 8, 1999**

Four Major Issues are presented in the Notice of Project Change (NPC) for the Greylock Center Project in Adams: identification of a preferred alternative site plan; formal confirmation of wetlands and riverfront areas on the site; results of groundwater exploration; and a request for an early action waiver for Greylock Lodge including the environmental education center and associated infrastructure. The following comments address those four issues and not necessarily other comments BRPC may have regarding the project. Other comments will be submitted in response to the Final Environmental Impact Report.

1. Identification of a Preferred Alternative Site Plan

The NPC identifies a Preferred Alternative Site Plan. This plan was developed after much public input and extensive study of the site. This preferred plan is similar to the Modified Site Plan presented in the Draft Environmental Impact Report (DEIR.) In BRPC's comments to the DEIR a preference was indicated for the Modified Site Plan over the Master Plan presented in the DEIR. The Modified Site Plan would lower development costs, contribute to less site fragmentation and result in fewer environmental impacts. BRPC also recommended that an amended DEIR be filed if the modified site plan was adopted. This NPC serves as an amended DEIR and BRPC appreciates the opportunity to comment prior to the Final Environmental Impact Report.

Key changes to the Preferred Alternative Site Plan from the DEIR Master Plan

- The Hotel/Conference center and Mountain Cottages are relocated to a village center
- The use of Basset Brook Road is minimized
- The golf club house is relocated to the center of the golf course and center of the site
- The golf course is substantially re-configured with some holes moved more to the northern part of site

Key changes to the Preferred Alternative from the Modified Site Plan.

- Greylock Lodge (Environmental Center) (Phase 1 – Early Action Waiver) is relocated to the easterly most part of the site. The Environmental Center is consolidated with Greylock Lodge. Accommodations are changed in the Environmental Center / Lodge from dormitory style lodging to hotel style lodging.
- The golf course is re-configured to a more compact "returning nines" course. Some of the holes of the golf course are relocated to the north of the site and to the north side of Hoxie Brook. (Phase I)
- The golf club house is relocated to the center of the site. A "Parks College" programming component is added for environmental training, to be operated by DEM. (Phase I)
- South Knoll Park is added to the southern most portion of the site. (Phase not clearly specified)
- The equestrian center is eliminated.
- Stream crossings from trails are reduced (Phase I & Phase II) from 76 to 47
- Some residences are proposed along West Mountain Road (8 units shown in typical "ANR" fashion)
- Some residences are proposed in a less compact development pattern and in a more "traditional" subdivision fashion. (Up to 50 residential units are proposed to be constructed in Phase I.)

1 The Preferred Alternative Site Plan, as was the Modified Site Plan, is improved over the Master Plan presented in the DEIR. There are still some areas where the Preferred Alternative could be improved. Specifically these areas of improvement are in the layout of 8 units shown in typical "ANR" fashion along West Mountain Road at the "entrance" to the project and to the "traditional" subdivision style housing development proposed along West Mountain Road, both east and west of the proposed village.

ANR development is development along road frontage where approval is not required under the subdivision control law. ANR development is generally allowed by right that greatly contributes to a number of non-sustainable development problems, such as habitat fragmentation, farmland loss, diminished forestry use, loss of scenic resources and the diminution of village centers. Arguably, ANR development is one of the most non-sustainable forms of development that exists, in that it "consumes" large areas of land for a relatively small number of users. Simply put, this project **cannot** be a sustainable development project with the ANR development proposed for the entrance of the project along West Mountain Road. Those housing units should be re-located to a more compact development pattern associated with the village.

There is another tangible reason to relocate those units as well. That reason has to do with the desired image for this project. The potential for this project to be a "national demonstration" project for sustainable development has been consistently touted. West Mountain Road serves as the entrance to the project. The entrance should convey an image of the identify desired for the project. A standard housing development does not convey that image.

The components of "traditional" subdivision shown further down West Mountain Road should be re-configured as well into a more compact pattern associated with the village center. The detached units shown in these "subdivisions" also are not elements of a sustainable development and, as is ANR development, is another example of "sprawl."

5.2 There are many complex reasons contributing to "sprawling" development patterns, not the least of which are consumer preferences. There are many impacts resulting from "sprawl," not the least of which are environmental. If this project is to be truly sustainable it should more thoroughly address the issue of sprawl. This should be addressed through the layout of the housing units. Just as this project is using an excellent and creative team of experts to grapple with sustainable development practices such as solar power, biomass heating, water conservation, etc., it should also grapple with site layout and issues related to "sprawl."

2. Formal confirmation of wetlands and riverfront areas on the site

The NPC contains an extensive description of the wetland resources on the site. It appears that extensive efforts have been made to minimize wetland impacts from the project. BRPC did not provide detailed comments to the DEIR regarding wetlands believing that wetland resources were being adequately studied by wetland specialists. BRPC commends the extensive efforts that have been made to minimize wetland impacts and encourages the same level of effort and detail regarding long term management and maintenance of the site, particularly regarding the golf course and trails. Of particular note, is the identification of Jefferson Salamander in vernal pools on the site. The long term management of Jefferson Salamander should be fully integrated into the educational programming associated with the site.

The Preferred Alternative Site Plan proposes to reduce the number of stream crossings from trails from 76 to 47. This should additionally minimize impacts to water related resources. Multiple use of the trails for hiking and golf purposes is a good example of the "sustainable" practices being used on the site.

3. Results of groundwater exploration

BRPC comments about the DEIR in relation to water resources were that it was incomplete in that it did not contain the results of the anticipated pump tests. Therefore, the environmental impacts from the water withdrawal could not be assessed until those tests were complete. BRPC recommended that the FEIR contain results of the well tests, an assessment of impacts, and if warranted, mitigation measures. Several alternatives for water use were explored, considered and are described in the NPC. Pump test results are included in the NPC. The preferred alternative regarding water use is the Adams municipal supply. This alternative is presented in the NPC as minimizing project infrastructure costs, minimizing construction impacts, negating potential stream flow reductions from groundwater withdrawal, and providing Adams with additional revenue. From a site development perspective this appears a very practical alternative and appears to minimize environmental impacts from the site.

5.3 While the use of the Adam's municipal supply is the best practical alternative is does raise some questions in regards to the larger concept of "sustainability," especially in regards to water use. Are there, for instance, some of the same issues, such as surface water impacts from groundwater withdrawals, present in regards to the use of Adams' municipal

supply as would be present from use of groundwater from the site? Is this a case of "transferring" impacts from the Greylock Center development to another area? Could, for instance, the substantial increase in withdrawal from Adams' municipal well cause unintended impacts to the base flow of the Hoosic River. These items are not fully addressed in the NPC. Presumably, the water withdrawal permit for the Adams' well would have considered these issues. To make this project a "model" example of sustainable development, additional discussion about the impacts of the increased water withdrawal from the project on the Adams' well could be provided.

4. Request for an Early Action waiver for Greylock Lodge including the environmental education center and associated infrastructure

The proponent is once again requesting an early action waiver for the construction and operation, including ancillary infrastructure improvements, of an Environmental Center upon approval of the DEIR. The proposed Environmental Center would contain the Nature's Classroom program component, which has been one of the most consistent and strongest components of the proposed project. Development of the Environmental Center could serve, as has been consistently stated, as a catalyst for the project. A far-reaching set of "sustainable technologies" are proposed for the construction of Greylock Lodge.

According to the NPC, 301 CMR 11.11(4) allows a discrete portion of the proposed project to proceed if certain conditions are met. These conditions are: (1) that the potential environmental impacts of the discrete portion are insignificant; (2) ample and unconstrained infrastructure facilities and services exist to support the discrete portion; (3) the project is severable; and (4) the agency action contains terms so as to ensure compliance with MEPA prior to commencement of any other phase of the project.

1. Potential Environmental Impacts

The potential environmental impacts from the development of Greylock Lodge, relocated to the eastern part of the site, appear minimal.

2. Infrastructure

As proposed, with the Lodge using municipal water and sewer, the infrastructure seems adequate to handle this portion of the project. It is uncertain when transportation improvements to the project would be developed. The transportation impacts from Greylock Lodge appear to be minimal although those impacts were not fully discussed in the NPC.

3. Severability

From an environmental perspective, the development of Greylock Lodge appears severable, that is, this portion of the project does not seem to require other phases or restrict the avoidance, minimization or mitigation of environment impacts from other phases of the development. If the waiver is granted, the waiver letter should clearly state that this portion of the project still must be considered as part of the overall project total amounts when measuring cumulative impacts and thresholds from the project, such as the total area of altered wetlands.

4. MEPA Compliance

The NPC states that the Master Lease will stipulate that GMA cannot commence on other private parts of the project until the MEPA process has been completed.

In BRPC's comments to the DEIR two issues were recommended for greater attention before an early action waiver was approved: (1) the private property in-holding in relative close proximity to the proposed Environmental Center site; and (2) the final disposition of the property in relation to the Master Lease, project performance guarantees and project severability, especially in the in the context of long term property disposition.

Regarding the private property issue, the relocation of the Lodge to the eastern part of the site effectively eliminates that issue. Regarding the final disposition of the property, BRPC's comments to the DEIR regarding a request for early action, raised questions about the final disposition of the property in relation to the Master lease. The NPC does not seem to specifically address those comments. From a conversation with Stephen Brown, DEM Project Manager, it was learned that the Master Lease will most likely undergo public review prior to approval. Presumably, greater detail will be available at that time. The mechanism for separating out this "lot" from the rest of the property should be described in greater detail. Some type of "building envelope" should clearly be defined and delineated as a condition of the waiver. Procedures should also be specified for long term disposition of the Greylock Lodge "parcel property."

Special mention should be included about long term disposition of Greylock Lodge should other parts of the project not move forward.

There are several uses of the use of the term "Phase I" in the NPC. If a waiver is granted, it should clearly state that the waiver is solely for the Greylock Lodge and related infrastructure improvements, and not Phase I as described on Table 1-2 on page 1-35 of the NPC.

From a practical standpoint there seems to be little reason not to grant an early action waiver for this component. Several concerns that BRPC raised in the DEIR comments, including those regarding protection of public funds, seem to begin to be addressed by this change. Infrastructure costs, in particular, appear to be substantially reduced in the proposed initial portion of the development. The "conservative approach" proposed for overall project development should also help to safeguard public funds.

BRPC continues to be concerned about project segmenting and the precedence this approval might set regarding segmenting. Project segmenting is a serious issue, especially in small communities with volunteer boards who frequently undergo substantial turnover. BRPC recommends that if the Secretary does grant an early action waiver, the Secretary's decision fully explain how this approval is not project segmenting and how it is consistent with previous MEPA policies.

Other Comments

With some of the changes proposed in the NPC, there seems to be movement away from some of the aspects of this project that contribute to this project being a "model" for sustainable development. This is evident with the proposed water and wastewater use for the project. An initial idea of the project was to try to use water for the project from the site and subsequently return it back to the site without environmental degredation. Using Adams' municipal water supply and wastewater treatment, while an extremely practical solution, is a substantial change from that initial idea. It was explained, through a conversation with the Stephen Brown, DEM Project Manager, and Jim Leitch, Town Administrator, that this change is an expansion of the definition of sustainability in that it incorporates the community and the Town of Adams to a greater degree. Broadening the concept of sustainability to include the community is desirable. It would be preferable for that scope to be expanded to an even larger area, such as the watershed or the Northern Berkshire County region. It is something that BRPC has recommended previously, most notably in regards to the economic benefits from the project. BRPC encourages the continued broadening and integration of sustainability concepts to the community and the region. Furthermore, BRPC encourages the broadened definition of sustainability to other areas of the project in addition to water and wastewater use.

It was also explained by Stephen Brown that options are currently being explored to examine innovative measures regarding the long term disposition of the property that would beneficially contribute to the long term management of the property. BRPC has consistently been concerned that sufficient resources be available to continue high quality management of the property and various property components once it is developed. BRPC encourages an aggressive, creative, and innovative effort through the Master Lease process to insure that the various private project components contribute to the long term management and maintenance of the public components, primarily recreational, of the projects and sustainability efforts are continued to be carried forth in the community.

Approved by the Berkshire Regional Planning Commission Executive Committee on October 6, 1999.

OF

PREPARED BY	
DATE	

SECRETARY ROBERT A DURAND

EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
100 CAMBRIDGE ST.
BOSTON MA.

MEPA
11083

RECEIVED
OCT 12 1999
MEPA

10/6/99

DEAR SECRETARY DURAND:

REGARDING THE "GREYLOCK GLEN CHANGE(S) OF PLAN" AND ITS APPROVAL.

AFTER 4 1/2 YRS. OF PUBLIC COMMENT, AND ADVICE ON HOW TO CONDENSE THIS SUBDIVISION PROJECT, IT APPEAR NO ONE WAS LISTENING, AS IT NOW ENCOMPASSES 2/3 OF THE ENTIRE PROPERTY. AFTER FINAL DELINEATION OF THE WETLANDS' CHANGES ARE NOW BEFORE YOU NOT BECAUSE OF PUBLIC INPUT, BUT BECAUSE OF THE NEED TO PLACE THE 18 HOLE GOLF COURSE, THE FIBER INSTITUTE, THE NEW CONNECTOR ROAD, THE CONFERENCE CENTER/HOTEL, THE NATURE'S CLASSROOM BLDG, THE 350 HOUSES, AND THE NEWLY ADDED CLUBHOUSE AND PARKS COLLEGE IN A DRY PLACE. NOT TO MENTION SPACE NEEDED FOR PARKING, TRAIL HEADS, RUSTIC CABINS, A DRIVING RANGE, AND SNOW TUBING HILLS

I HAVE STOOD, AND LISTENED, AS TWO PREVIOUS GOVERNOR STOOD ON THIS PROPERTY, AND PROCLAIMED THAT THIS WOULD BE THE CENTER OF ENVIRONMENTAL EDUCATIONAL DEVELOPMENT, AND A SHOWCASE OF THE EAST FOR GREEN TECHNOLOGIES AND SUSTAINABILITY. YET AFTER 4 1/2 YEARS, FUNDING STILL REMAINS A

PREPARED BY	
DATE	

QUESTION. NO SINGLE POLITICIAN HAS STEPPED FORWARD TO EMBRACE THIS PROJECT AS "HIS OWN": NO ENVIRONMENTAL GROUP HAS APPLAUDED THIS PROJECT. DEM'S OWN STUDY COMMITTEE HIRED FROM RHODE ISLAND, QUESTIONED THE SALE OF HOUSING BECAUSE OF A CURRENT LACK OF INTEREST IN THIS AREA FOR SECOND HOMES.

NATURE'S CLASSROOM WANTS TO BUILD A $ 5 MILLION BLDG. AS SOON AS POSSIBLE ON A WAIVER FROM REST OF THE PROCEEDINGS WITH THEIR OWN MONEY. THIS TAXEXEMPT FACILITY ONCE COMPLETED, WOULD EXIST EVEN IF THE REST OF THE PROJECT FAILED, BEING FREE LAND AND INFRASTRUCTURE ON A MAJESTIC PIECE OF PROPERTY IS A "NO BRAINER" FOR THEM.

6.1 IS ENVIRONMENTAL SUSTAINABILITY BEING MET. A REQUIREMENT OF THIS PROJECT, IT SEEMS MINIMA AT BEST. WASTEWATER TREATMENT, WATER CONSERVA PROTECTION OF ENVIRONMENTALLY SENSITIVE AREAS, WIND POWER, SOLAR POWER, HYDRO POWER, QUIET AREAS, WILL VIEWING AREAS AND RECYCLING PROJECTS APPEAR TO AFTER THOUGHT AT BEST. WHERE IS THE GREEN TECHNOLOGY

TREE CUTTING, BLASTING AND BULLDOZING OF AP 300 ACRES TO THE NORTH OF HIXIE BROOK APPEARS NECESSARY TO EXPAND THE GOLF COURSE! ORIGINALLY DESIGNATED A NATURAL AREA WITH PRIMITIVE CAM NOW SEEMS TO BE ONE OF MANY MISTAKES ON TH

PREPARED BY	
DATE	

NEWEST PROPOSAL.

PLEASE DO YOUR RESEARCH OF PREVIOUS SITE PLANS. COME OUT AND WALK THE PROPERTY. REREAD THE CONCERNS OF PREVIOUS SECRETARY TRUDY COXE, AND YOU WILL EASILY SEE THE WEAKNESSES OF THIS PROPOSAL AND ITS SIZE

RESPECTFULLY

STEVE BLAZEJEWSK.
ALGER ST.
ADAMS MA. 01220
MEMBER MT GREYLOCK ADVISORY COUNCIL
ADAMS RESIDENT. ADAMS MERCHANT

10

24 Fisk Street
Adams, MA 01220

October 7, 1999

7

RECEIVED
OCT 12 1999
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

Subject: Greylock Center, Adams MA
EOEA No. 11083
Notice of Project Change

Dear Mr. Durand:

Heartbroken, disappointed, discouraged, saddened, angered -- these are the feelings I have as I look at the map in the Notice of Project Change. DEM-GMA have sold the idea to the town that this is a better plan because of public comment. This is NOT a better plan. Most commentors would never endorse this "preferred alternative" plan. I certainly do not. Is anybody even listening to us? It appears not. One looking at this map for the first time would think it is a housing development sprawled on West Mountain Road from one end to the other and a golf course.

7.1 Former Secretary, Trudy Coxe, states in her certificate "this project must be held to high environmental standards.... Sustainability cannot be an add-on to a conventional site plan; sustainability needs to be the core of the design, construction, operation and management of the Greylock Center projects." How does this plan fulfill these requirements?

No early action waiver for the Greylock Lodge should be granted until an environmental review has been completed for the whole project. I am confused, I thought the lodge was an environmental education center. At both public meetings in Adams, we were told, "Make no mistake -- I'm in the hospitality business," by the executive director of Nature's Classroom.

For three years, we have tried to work with DEM-GMA, hoping to protect this beautiful, unique place. The #1 tourist attraction is scenic beauty. In the last few weeks, I have seen cars at the Glen from Virginia, Tennessee, Kentucky, Florida, Pennsylvania, New Hampshire, and several from Connecticut, New York, New Jersey, and Vermont. The summer programs by DEM, AMC and CET have been very successful. The Glen is drawing hundreds of people. Once all these buildings are built, who is going to come here?

EOEA #11083

There should be no new houses built on the lower end of West Mountain Road along Peck's Brook. They could ruin the spectacular Peck's Falls and Hemlock Gorge. How do these fit into the Master Plan? 7.2

The new golf layout is horrendous. Golf no longer fits on the property. Because of the wetlands, the back nine has moved further north. The Thiel Farm is an exceptionally beautiful forested area. Thousands and thousands of trees would have to be cut and the rocky ridges blasted -- and for what? Golf? What happens to the habitat of the deer, rabbits, coyotes, turkeys, squirrels, hawks, and owls that I have seen in this area? Last fall I experienced a migration of at least 50 squirrels. There is a flower called "fringed polygala" that grows on these ridges. I have not seen them growing anywhere else! This spring these flowers were exceptional. The Thiel Farm area of 99 acres is abutting Reservation Land given to support the mission of Greylock Center. I do not believe that the intention of this gift was to clear cut and blast ledge. I believe the mission was for passive recreation for the general public, not for just a few. When thousands of trees are cut and the rocky ledge blasted and earth moved, what is going to happen to Hoxie Brook? I strongly oppose this area being used for golf. 7.3

This property would be wonderful for tenting and rustic cabins. But, it appears that very little thought was given to the placements, (one in a riverfront area, another on steep ledge) with no roads, water, or comfort station near any of them. Most campers are families with children. Are they to carry all their equipment and water to their sites? 7.4

I have many other concerns. There are numerous safety issues with the golf surrounding the Glen and the accessibility of the trail heads -- one looks as if it's in someone's backyard, another, at the clubhouse. What kind of trail goes through a building in the village, as shown on the map? There should be no trail crossing at Peck's Falls. The connector road and bridge are too close to a species of special concern. How will you protect them? This connector road will have major impacts on environmentally sensitive areas, is too close to the driving range, and will hardly be used. Is this sustainable? 7.5

My family and I have enjoyed and cherished the Glen for years. As a child, Dad swam at the bottom of Peck's Falls. Now, at 84 years young, he and Mom, at 81 years young, sit by the pond watching for the blue heron, ducks, and geese, or walk the lovely nature trail, always enjoying their children, grandchildren, and great-grandchildren and the tranquillity of this breathtaking spot. My grandchildren play, swim, and learn about frogs,

salamanders, butterflies, and snakes. Whenever I am there at 6:00 in the morning walking the dog or 9:00 at night listening to the peepers and coyotes, there are other people enjoying the same simple pleasures. **THIS IS WHAT GREYLOCK GLEN IS ALL ABOUT!**

Sincerely,

Betty Bresett

Betty Bresett

cc: Governor Paul Celluci
Lieutenant Governor Jane Swift
State Representative Daniel Bosley

DF

MEPA Office
EOEA File No. 11083
Greylock Center
100 Cambridge St.
20th Floor
Boston, MA, 02202

RECEIVED
SEP 28 1999
MEPA

8

Dear Dick Foster,

I am a taxpayer in Massachusetts and a resident of Berkshire County. I want it to be on record that I am opposed to the travesty that is the development of the Greylock Glen.
I have hiked Mt Greylock many times and it is a beautiful mountain. The eastern side of it should not be destroyed for the sake of developer's profit and short-sighted towns people's greed.
In the past few years I have been witnessing Berkshire County build and develop. This is just one more blight on the landscape.

Sincerely,

Charlie Browne

Charlie Browne
280 Eleanor Rd
Pittsfield, MA 01201

Scarafoni Realty

103 MAIN STREET, P. O. BOX 307
NORTH ADAMS, MASS. 01247
TELEPHONE (413) 664-4539

OF

RECEIVED
OCT 12
MEPA

October 5, 1999 9

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Dear Secretary Durand:

Please accept this letter as an endorsement of the proposed development of the Greylock Center Project in Adams, Massachusetts. We write to reaffirm our continued support of the environmentally sound, and sustainable project.

The Notice of Project Change report (EOEA #11083) addresses public concerns in reference to preferred alternatives, wetlands, groundwater exploration and the consolidation of the golf course. We once again feel the developer has addressed these issues in ways that will enable this project to go forward.

In conclusion, we urge you to continue to support this project which will promote economic development, enhance the region, and which continues to maintain the highest standard of design to protect natural and cultural resources.

Sincerely,

David G. Carver
Scarafoni Associates

October 8, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Subject: Greylock Center, Adams MA
EOEA No. 11083
Notice of Project Change

Dear Secretary Durand:

Thank you for the opportunity to provide comments on the Notice of Project Change for the Greylock Center Project filed by the Department of Environmental Management (DEM). Although the Center for Ecological Technology (CET) has worked under contract with DEM to help develop sustainable strategies for the project, these comments are outside the scope of our contract work.

We want to first applaud DEM and Greylock Management Associates (GMA) for adopting the modified site plan outlined in the Draft Environmental Impact Statement. Benefits of this approach include:

* Consolidating the golf course: Monitoring the environmental impacts and implementing an effective Integrated Pest Management Plan will be more feasible with a more compact footprint.

* Creating buildings that will serve multiple functions: The Greylock Lodge and Club House, as described, will accommodate a variety of audiences and functions. This approach, when possible, is preferable to constructing separate buildings for each use.

* Integrating the trails and the golf course: This integration is one of the greatest challenges of the site planning. Well-marked and maintained trails, carefully sited to provide hikers with a safe and enjoyable experience will be among the site's principal assets.

In each case, this modified approach will decrease environmental impacts and decrease costs, thereby enhancing potential for economic success.

We would also like to express several concerns as follows:

*Housing: There are two issues of concern regarding the housing component outlined in the site plan. The first is the lack of clear connection to programming on site and the second is location of a portion of the housing.

10.1 1. Relationship of housing to programming at Greylock Center. We understand that the intent of the Notice of Project Change is to describe changes relative to the plan presented in the DEIR, but we are concerned that to-date there is no clear description of how housing is tied to the program. Nor is there detailed information about the type of buildings, ownership of property and process for plan review and oversight of construction to ensure that sustainable, green building techniques are used.

As we approach the 21st century, the interest and demand for "soft adventure", quality recreation, resort-type conference facilities and environmental education are increasingly becoming successful economic drivers for projects that also foster increased appreciation of our natural environment. As such, Greylock Center's mission to provide quality recreational activities is a vision that is both timely and consistent with the goals of DEM. We urge DEM and the development partners to explore creative design and ownership scenarios that would be consistent with this goal and the Master Plan. We suggest that the rustic cabins might present an opportunity that could meet several project objectives. See below for further detail about this concept.

10.2 2. Location of housing. The revised site plan relocates several houses on the lower portion of West Mountain Road, in a sense continuing the current development pattern of private single family residences. This is inconsistent with the 'village concept' previously presented which promotes a more clustered development pattern. In addition, the physical separation of buildings from the village core could make it more difficult to tie housing to the programming at the center.

*Rustic Cabins: We believe that this component of the development has exciting potential as a destination with great appeal to visitors to the Berkshires. However, the new location noted in the Notice of Project Change raises a number of questions. At this point the rustic cabins have been relocated on a shelf on a steep slope with no specified road access for initial construction and subsequent use by overnight guests. It is unclear where visitors "check-in" to confirm reservations and where they would park when using the cabins. Are there utilities, water, restrooms, etc. associated with the cabins? We encourage DEM
10.3 and the development team to give this concept and location of the cabins further consideration as the site plan is finalized.

There may be an exciting opportunity to construct attractive and versatile "eco-cabins" that demonstrate four-season low-impact shelter design (e.g. wood pellet stoves, photovoltaics for lighting, composting toilets). Different levels of amenities and a corresponding fee structure could be adopted. Eco-cabins would be consistent with the vision of the Center and fulfil a unique market niche. This component could be a suitable alternative to single family housing that is more consistent with programmatic needs and provide a revenue stream for the developer. Guest cabins could meet program needs by serving as accommodations for conference attendees and recreational vacation lodging. They could also meet a regional market need by providing a unique place to stay

in a spectacular setting for increasing numbers of visitors to northern Berkshire County (e.g. drawn by Mass MoCA).

10.4 * Connector Road: In light of the current phasing and site plan, the need for a connector road is significantly diminished. Instead, we suggest a "connector trail". When and if housing is developed in the village, a shuttle service via electric cart or some other means, would bring people from the village to the golf course. Or the trail would encourage foot, bike, ski, or other traffic between other places on the site and the golf course, thereby reducing automobile traffic as feasible. This approach is underway in national parks and should be considered at Greylock Center.

10.5 * Amphitheater: The site plan identifies an 'amphitheater' at the south end of the property. The purpose, design, capacity, and other features have not yet been stated. We hope that any changes to this area be considered carefully. We would be concerned about the need for parking or other amenities and unintended increased development associated impacts to this part of the site.

10.6 *Water: We are concerned that municipal water is recommended for all potable and non-potable uses on site, including all phases of golf course irrigation. It is not clear why this approach has been selected. The letter and detailed report submitted by groundwater consultant Vanasse Hangen Brustlin, Inc. (VHB) and included in Appendix A recommends consideration of a modification of several options, including a plan that supplements municipal water with on-site water. We urge you to continue to review this option. Retention ponds currently noted on the site plan could be used to store water from well D as well as run-off from paved surfaces, such as the Club House and adjacent parking area(s). It appears that only the well logs for the shallow "overburden" wells are included in the Notice of Project Change. Are there additional logs or pumping information pertaining to deeper well exploration? These would be very helpful in further reviewing and evaluating the decision to adopt this option.

*Golf Course: The relocation of the golf course will result in extensive tree cutting that is not discussed in detail in the Notice of Project Change. What will be the impact on the large stand of stately plantation pines and trees of significant ages and size to the north of Hoxie Brook?

Once again, thank you for considering these comments. We hope they will be helpful to DEM and the development partners in creating a successful project.

Sincerely,

Laura Dubester
Nancy Nylen

DF

September 28, 1999 11

To: Bob Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Office EOEA # 11083 Greylock Center
100 Cambridge Street
Boston, Ma. 02202

Subject: EOEA #11083 "Greylock Center"

Dear Secretary Durand,

I am writing this letter with the hope for success of the Greylock Glen Project but with also a deep feeling of frustration.

My hope is that the proposed project for the Greylock Glen will finally become reality. My frustration is that over the past thirty years I and the citizens of Adams and North Berkshire have watched with great expectation the various projects for the Glen, only to see these projects destroyed by a small group of individuals. The sole goal of these individuals is to have the Glen incorporated into the Greylock Reservation without any development. They diligently worked to delay each project until the project becomes unworkable and the developer quits. In this case, if Greylock Management Associates (GMA) continues, I guarantee the opponents will file suit to stop this project.

I have attended all public meetings, (over the past 20 years) pertaining to the development of the Glen and this time I feel there is a chance the project could become reality. GMA has (over a period of years) prepared a feasible project that can work and which has the support of the majority of Adams residents. I believe they have (in good faith) addressed all previous concerns which the various environmentalist groups have identified. They have changed the project plans to ensure that the project meets all environmental issues. Most importantly they have showed their willingness to work with the environmentalists to make the project work. Though it is only wishful thinking that those opposed will not try to use transparent means to delay this project further.

I know one of the main concerns (for those who oppose this project) is the 300 houses which GMA will build if the project is implemented. At numerous meetings I have heard those who oppose housing state there is no market demand for it. I have also heard GMA state that the houses will only be built as the market demands. If those who oppose housing so fervently believe there is no market then why should they worry over the housing being proposed. If there is no market, GMA will never build the 300 houses.

We definitely need tourism in North Berkshire. Williamstown has the college, Clark Institute and its theaters. North Adams now has Mass MOCA. With the Greylock Glen Project Adams will now be able to attract its share of tourist. We can no longer depend upon manufacturing companies. I can presently count approximately 26 companies that have closed or left the

Berkshires over the past thirty years. We continue to see a reduction of manufacturing jobs in this area Most recently GE Plastics and Crane have announced reductions, while Husky has announced a December closing. Our economy in the Berkshires is becoming more dependent upon tourism.

As for Adams we have a large elderly population. Our census is declining each year because we have nothing to attract young educated professionals to our town. I believe that if the Glen is developed and the people who visit this area get to experience the beauty that our town has, they will be attracted to Adams and will even consider moving to our community. Young professionals who are looking for a better life away from the city will them take notice what Northern Berkshire can offer. There is a great possibility they would relocate to this area and bring the jobs with them. The area would be more attractive for small businesses to relocate because finally we would have something to offer.

Since the proposed environmental education center can stand independent from the completion of this project and this organization has demonstrated their success with other educational centers they have established, a center at the Glen would be extremely beneficial to this region. Also note that our school district sends several classes (each year) to the Nature Classes in Connecticut and the parents and teachers have nothing but praise for this program. To give hope to our citizens, it is necessary to demonstrate that your office is committed to this project. Promises, further studies/reports and meetings will never gain the confidence of our citizens in your office. I believe after all these years of delays, in sincerity it is time to give the waiver needed to allow the education center to proceed.

Finally, I'd like to state that a percentage of citizens in Adams who oppose the development of the Glen are the same people you can see daily up at the Glen with their dogs running loose. Since the town has a leash law and they are not free to walk with their dogs without restraint they go to the Glen. Just to give one example, on one hot day (this summer) I decided to go to the Glen to swim, there were approximately six persons in the area of the middle pond with about the same number of dogs. I was trying to swim while two people kept throwing a stick into the pond and encouraging the dogs to retrieve the stick. How enjoyable do you think it is to have several dogs swimming with you? Some individuals know that with the development their dogs will not be able to freely run loose. Therefore, they selfishly are not thinking of the good of the whole community. If you walk the Glen you'll find the trash etc. from those who use this area for partying. GMA would assume the stewardship that the Glen needs, to ensure that this public area is protected from those who have no respect for the area. They will also ensure that the beauty that is there is protected and will be enjoyed by many.

Let the beauty of the Glen be enjoyed by a multitude of people and let the Town of Adams and the Northern Berkshire region benefit from this project. You have the power to make this project become reality. After many years of disappointments, let our dreams be fulfilled.

Larry Clairmont

Larry Clairmont
2 Kerr Avenue
Adams, MA. 01220

OF

#11083

Box 490
Hinsdale, Ma. 01235

RECEIVED
OCT 07 1983
MEPA

Mr. Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Ma. 02202

Dear Mr. Durand:

I wish to express an opinion on the Greylock Mountain Center plan. Basically, I am against any development of any kind on that site. That mountain is one of the main tourist attractions of our area. Its natural beauty is the reason this is so. Any development will decrease this. There are very few jobs left in this part of Massachusetts; with less each passing day. Who are you going to sell these three hundred homes to? Our tax dollars will wind up maintaining them. There are dozens of golf courses in this area. Even little Hinsdale has one. So does Adams, North Adams, and Williamstown. Adams couldn't find water for all of the people in Adams a couple of years ago. South Adams got water from Cheshire. Now, because there is no water on Greylock, Adams seems to think it can handle three hundred new homes, a golf course, and a hotel. Think about it!!

I'm not against all development. A summer, nature camp for kids, run by your office; would be a positive use of that land. A cross-country ski area, used or walking in the summer (not for 4 wheelers) would be fine.

If you would put the subject of this planned development on the ballots of the western counties, you would find the vast majority of people against it.

Your position is to represent the people of Massachusetts. Allowing this present development is not doing that job.

Sincerely,

Philip Collins

DF



In the Village Beautiful

Williamstown Savings Bank

STEPHEN G. CROWE
PRESIDENT

13

OCT 08 1999

October 5, 1999

Mr. Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Dear Secretary Durand:

Please accept this letter as an endorsement of the proposed development of the Greylock Center Project in Adams, Massachusetts. We write to reaffirm our continued support of this environmentally sound, and sustainable project.

The Notice of Project Change Report (EOEA #11083) addresses public concerns in reference to preferred alternatives, wetlands, groundwater exploration, and the consolidation of the golf course. We once again feel the developer has addressed these issues in ways that will enable this project to go forward.

In conclusion, we urge you to continue to support this project which will promote economic development, enhance the region, and which continues to maintain the highest standard of design to protect natural and cultural resources.

Sincerely,

Stephen G. Crowe
President

795 MAIN STREET • P.O. BOX 68 • WILLIAMSTOWN, MASSACHUSETTS 01267-0068 • TEL (413) 458-8191 • FAX (413) 458-8338

Member F.D.I.C. and the Deposit Insurance Fund.

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

14

MEMORANDUM

TO: Executive Office of Environmental Affairs
Robert Durand, Secretary
Attention MEPA Unit: Dick Foster
100 Cambridge Street, Boston, MA 02202

THROUGH: Regional Director, DEP-WERO
Steven Halterman, Deputy Regional Director, DEP-BRP-WERO
Steven Ellis, Deputy Regional Director, Special Projects, DEP-WERO

FROM: Tim McKenna, Wetlands and Waterways Program/Western Region DEP
Kurt Boisjolie, DEP Point of Contact, Greylock Center Project

DATE: October 8, 1999

SUBJECT: EOEA # 11083, Greylock Center Notice of Project Change (NPC)

The Notice of Project Change for the proposed Greylock Center project provides an improved site layout (the "Preferred Alternative"), as compared to the proposal presented in the June 30, 1998 Draft EIR. The DEP comments on the submitted Notice of Project Change (NPC) are provided to clarify specific points in then NPC, as follows:

1. Wastewater Disposal:

- The wastewater expected to result from the proposed development is greater than 15,000 gallons per day (gpd). Two options available for wastewater disposal from this project are:
  a) tying into the Adams wastewater system, or
  b) discharging onsite. If more than 15,000 gpd design flow were to be discharged onsite, a Groundwater Discharge Permit (GWDP) would be required.
- In two cases the NPC erroneously states that various options for wastewater disposal were ruled out by DEP directive. These errors were possibly due to ambiguity of previous DEP statements; such statements are therefore clarified herein as follows:
  - Pages 1-14, 1-15, and 5-11(Issue 7) of the NPC erroneously states that, by DEP directive, wastewater from this project can only go to the Adams wastewater system. In fact, the project proponent has the option of pursuing a Groundwater Discharge Permit (GWDP). Factors influencing this decision include the suitability of on-site soils for groundwater discharge, the expense of securing a GWDP, and the regulatory responsibility of complying with the GWDP.

14.1

- Pages 1-15 and 5-11 (Section 7) of the NPC incorrectly states that the DEP would not allow Alternative wastewater treatment unless the treated effluent was discharged into the Adams wastewater system . In fact, an Alternative wastewater disposal system could be proposed for this project with a groundwater discharge, if a GWDP could be secured. DEP's previous DEIR comment of September 9, 1998 which stated: "Innovative and Alternative sewage treatment could be displayed at the Environmental Center, with a discharge of effluent to the proposed sewer to the Adams WWTP" was intended to provide an opportunity to the proponent to display Alternative wastewater treatment without risking violations of effluent permit standards.

- As stated on page 1-15, second paragraph, of the NPC, the extension of the Adams wastewater collection system would render the Alternative wastewater treatment system a redundant capital and operational cost. The educational and research benefits of a demonstration Alternative wastewater treatment system should be evaluated in comparison to such additional costs.

2. **Water Supply**

- Appendix A, June 30, 1999 letter from VHB, page 4, last paragraph states that a Water Management Permit would be required to obtain excess quarry water from Specialty Minerals to supply irrigation water to Greylock Center. A Water Management Permit would not be required for this purpose, because such quarry water is already covered by Specialty Mineral's Water Management Permit.

14.2

3. **Wetlands/Waterways**

- The proposed project will impact a substantial area of Riverfront Area due to trail construction. The construction of trails may be permitted in accordance with the provisions of 310 CMR 10.53: (6). In the course of reviewing trail construction under this provision it will be necessary to document that all alternatives to reduce the square foot alteration to riverfront area will have to be considered. This could include alternatives to reduce trail widths, use of existing trails, and eliminating proposed redundant or excessive trails.

14.3

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF FOOD AND AGRICULTURE
LANCASTER REGIONAL FIELD OFFICE
142 OLD COMMON ROAD, LANCASTER, MA 01523 (508) 792-7711 FAX: (978) 365-2131

DF

15

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

JONATHAN L. HEALY
Commissioner

MEMORANDUM

To: Bob Durand, Secretary
Executive Office of Environmental Affairs

Attn: Dick Foster, MEPA Office

From: Marcia Starkey MS

Re: EOEA #11083 NPC Greylock Center Adams

Date: 7 October 1999

RECEIVED
OCT 08 1999
MEPA

The Department has reviewed this Notice of Project Change for the Greylock Center project which identifies a preferred alternative plan, confirms wetland and riverfront areas, provides results of groundwater exploration and requests an Early Action waiver for the construction of Greylock Lodge, including the environmental education center, and its supporting infastructure.

As described in the Notice of Project Change, a Memorandum of Agreement has been concluded between the Department of Environmental Management, Greylock Management Associates and the Department of Food & Agriculture which provides for the coordinated implementation of an agricultural development plan for the Greylock region. Execution of the plan will fulfill the requirements of Executive Order 193.

The terms of the MOA specify that the DEM, GMA and DFA will coordinate and develop agricultural education programs as part of the agricultural development plan. In order to provide this coordination, DFA's Director of Agricultural Development is willing to serve as a member of the Greylock Lodge program steering committee.

The preferred alternative plan appears to address most of the concerns voiced by the Greylock Glen Greenhouses. We ask that the Final EIR specifically respond to any outstanding concerns, notably that of access during construction, and provide an acceptable mitigation plan for any impacts which may affect the horticultural viability of the nursery.

15.1

c/Peter C. Webber, Commissioner,DEM
Jonathan L.Healy, Commissioner,DFA
Mary Jordan, Director of Agricultural Development,DFA
Greylock Glen Greenhouses

♻

DF

FREEDMAN, DEROSA & RONDEAU
ATTORNEYS AND COUNSELLORS AT LAW
85 MAIN STREET, P. O. BOX 746
NORTH ADAMS, MASSACHUSETTS 01247-0746
TELEFAX (413) 664-7379

(413) 664-1073

Morton Freedman
John B. DeRosa
Timothy J. Morey
Thomas Manuel*
Jan P. Myskowski
Brigid Hennessey+
Erin C. Carlson+

Patrick E. Rondeau*
of Counsel

* Also admitted VT
+ Also admitted NY

16

October 6, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA UNIT
100 Cambridge Street
Boston, MA 02202

RECEIVED
OCT 08 1999
MEPA

Subject: Greylock Center, Adams, MA
EOEA No. 11083
Comment on Notice of Project Change

Dear Secretary Durand:

We represent Thomas and Paulette Morin of West Mountain Road, Adams, Massachusetts, and on their behalf have previously made comment in regard to the project.

As you perhaps are aware, out clients own and operate Mt. Greylock Greenhouses, which is located within, and contiguous to, the project boundaries. Mt. Greylock Greenhouses have been operated by our clients and their family and predecessors since the 1940's.

On their behalf, we have reviewed the document forwarded to our clients entitled "Notice of Project Change", and have discussed the contents of the document with them. We have reviewed the document in the context of our previous correspondence dated September 2, 1998 (our clients' comment to the draft Environmental Impact Report EOEA #11083), and the project's record history.

We are writing to continue to express our clients' concern over the impact that the project, as described in the Notice of

Project Change, will have upon our clients and their business. As you know, our clients also maintain their home at the business location, and previously have discussed with Commissioner Weber, and more recently (within the past year) with Mr. Flemming, the idea of moving both their home and business to another suitable location, which they now understand is not an option.

In our September 2, 1998 letter, we had suggested that the existence of our clients' residence and business within the proposed project was a significant factor that should have been described in sufficient detail to provide a baseline for the assessment of the impact upon our clients' business and property. We do not find from our reading of the "Notice of Project Change" document that this was accomplished, and reaffirm our comment made in the third from the last paragraph of the referenced letter.

16.1 As we have previously commented and as you are aware, paramount to our clients' interest (both business and personal) is the absolute requirement that West Mountain Road remain open, and that the public have full and unrestricted access from West Road to their property. Our clients are of the view that positioning the new connector road, as the main access road to the project and our clients' property, will adversely impact our clients' business. We are aware of the concerns expressed by the residents of lower West Mountain Road, but emphasize that any solution to the access issue must take in to account adverse economic consequences upon our clients' business, and that the impacts on the economics of their business should take precedence over the impacts of residential inconvenience. On the other hand, we share the concerns expressed by others that design of road improvements need to reflect and accommodate anticipated increased traffic flow from the project.

In addition, it is absolutely essential that during project construction, West Mountain Road remain open with full public access, and that a construction protocol be established with our clients' with times and activities, that take into account our clients' retail season.

16.2 Finally, we request again that the concerns commented upon both herein and in our previous letter of September 2, 1998 be addressed and that appropriate solutions be incorporated in the Final Environmental Impact Report.

We sincerely believe that these matters can be amicably resolved and assure you of our clients' cooperation in bringing these important matters to conclusion.

Very truly yours,

FREEDMAN, DeROSA & RONDEAU

By _____
John B. DeRosa

JBD/dlr
cc: Mr. & Mrs. Thomas Morin

OF

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

12 October 1999 **NHESP File: 97-1736**

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street, 20th Floor
Boston, Massachusetts 02202

RECEIVED
OCT 12 1999
MEPA

Project Name:	Greylock Center
Proponent:	DEM
Location:	Adams, MA
Document Reviewed:	Notice of Project Change
EOEA File Number:	11083

Attention: MEPA Unit/Dick Foster

Dear Secretary Durand,

The Natural Heritage and Endangered Species Program (NHESP) has reviewed the Notice of Project Change (NPC) for Greylock Center and would like to offer the following comments regarding potential impacts to species protected under the Massachusetts Endangered Species Act (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00).

The new configuration of the proposed golf course and residential/commercial development has improved since the filing of the DEIR, however, several rare species issues remain outstanding.

17.1 1. **Impacts to 200 Foot Riverfront Area.** While major portions of the golf course fairways have been pulled out of the 200 foot riverfront area, **significant** project impacts still occur within this area. These impacts include walking trails, cross-country ski trails, snowmaking apparatus, golf course cart paths, numerous stream crossings, and the road crossing over Peck's Brook. Each of these impacts should be addressed in the FEIR more thoroughly than they were addressed in the NPC along with an alternatives analysis for each activity. The Notice of Project Change only calculates impacts from stream crossings but the FEIR should include riverfront impacts from the trails themselves (width of each type of trail/path and square footage of impact within riverfront area). It appears that the amount of land that will be altered for trails within riverfront area may be significant and does not meet the standard that should be set for an environmentally sensitive development.

Natural Heritage & Endangered Species Program
Route 135, Westborough, MA 01581 **Tel:** (508) 792-7270 x 200 **Fax:** (508) 792-7275
An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement
http://www.state.ma.us/dfwele

17.2 In addition, the FEIR should analyze the impact of the pipeline construction for snowmaking within the riverfront area and analyze how the snowmaking itself will affect the rare species habitat in the streams. It is likely that burying a waterline for snowmaking within the riverfront area will have significant direct and indirect adverse impacts to rare species and fisheries.

2. **Impacts to 100 foot buffer of Wetlands.** Surprisingly, many of the golf course fairways impact the 100 ft. buffer of wetlands. Without this buffer, runoff from herbicides and fertilizers could have a detrimental effect on wetlands and associated perennial streams.

17.3 3. **Integrated Pest Management Plan.** The FEIR must contain an IPM specifically tailored to this site for our review.

4. **Pesticide Spraying.** It is likely that spraying for airborne pests will have an adverse impact on rare species and fisheries. The FEIR should specifically address this concern.

17.4 4. **Impacts from Chlorinated Public Water Supply.** During a recent meeting with DEM, NHESP and the Fisheries section of the Division of Fisheries & Wildlife, it came to our attention that chlorination from town water may adversely impact rare species and fisheries in the streams at Greylock. This issue should be thoroughly analyzed in the FEIR along with alternatives to prevent chlorinated water from entering stream habitat.

17.5 4. **Impacts to Peck's Brook from the Road Crossing.** The FEIR should address how the project will meet the rare species standards in the Wetlands Protection Act Regulations at the Peck's Brook roadway crossing.

5. **Impacts to Jefferson's Salamander.** In August of 1999 DEM make NHESP aware of a rare species that was found on the project site in April of 1999. Jefferson's Salamander (*Ambystoma jeffersonianum*) is a mole salamander that uses vernal pools for laying eggs in the spring while using uplands around the vernal pool at other times of the year. It is listed as a 'species of special concern' under the Massachusetts Endangered Species Act Regulations and is protected from a 'taking' unless a
17.6 permit is issued by the Director of the Division of Fisheries & Wildlife. The FEIR should address how this rare species habitat will be avoided.

We appreciate the opportunity to comment on this project.

Sincerely,

Hanni Dinkeloo
Endangered Species Counsel

DF

23 Temple Street
Adams, MA 01220-2141
October 6, 1999

18

Robert Durand, Secretary
Executive Office of Economic Affairs
Attn.: MEPA Unit
100 Cambridge Street
Boston, MA 02202

RECEIVED
OCT 08 1999
MEPA

RE: Greylock Center Notice of Project Change, Adams
EOEA #11083

Dear Secretary Durand:

I have reviewed the Notice of Project Change for the Greylock Center project in my home town and offer the following comments as part of the Massachusetts Environmental Policy Act review process.

1. The purpose of the Act is "to minimize damage to the environment." Reviews are to "include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact." I believe that this mandate should be implemented in a more comprehensive manner than is being done. Many people and organizations question whether the economic benefit of the project is worth the environmental cost. Numerous environmental groups have concerns about the impact of the project on the site, the Mt. Greylock Reservation and the ecosystem. The Citizens Advisory Committee did not unanimously support the plan. If so many environmental groups are concerned about the ramifications of the project, how can it be considered an environmentally friendly and sustainable development?

Numerous comment letters on the Draft Environmental Impact Statement were highly supportive of the project, mainly for the economic benefits it is expected to bring to Adams. People are relying on the Greylock Center project to be Adams' salvation. The town does not have an economic revitalization plan other than development of the Greylock Center. All the town's eggs are in one basket. If the expected economic benefits do not materialize, the economic and environmental impact will be great indeed.

The economic benefit of the project has not been substantiated. No cost / benefit analysis has been conducted. The $15 million funding gap has not been bridged. A review of alternatives, if the economic basis for a project is unproven, needs to evaluate the environmental impact of the possible scenario of a failed development.

18.1

2. The most active users of the Greylock Glen have found value in the passive recreational opportunities that abound at the site. Visitors would also. These uses could be enhanced by a le intrusive development plan. The golf course is an unsuitable fit for a site at the foot of Mt. Greylock, th

state's only highest peak. Housing and commercial development are better suited to the town's neighborhoods and center, where opportunities for rehabilitation are readily available. This development alternative should be considered.

3. If a more global, i.e. town-wide, evaluation of the sustainable development concept was made, would the development stand up to the analysis when there are considerable numbers of residential and commercial buildings in town that are vacant or underutilized? Changes in the project during its manifestation have eliminated more and more of the environmentally friendly components of the project. The project will now use town water and sewer. The golf course will now be a conventional type. Housing development will be little more sensitive to the environment than the typical housing subdivision. Lip service is being paid to the concept of sustainable development.

4. Has the town compared the cost of providing services to the project, direct, indirect and annual maintenance, with the tax revenues it will generate?

5. The project developer cites how few acres are being developed of the total acreage. It appears, however, that most of the developable acreage is being developed. The new plan shows almost complete development of the site from north to south. Only steep slopes, wetlands and areas where it is too costly to install infrastructure are undisturbed.

6. The Thiel Farm section of the property was to be left mostly undeveloped in the previous versions of the plan and it now will be impacted greatly by the golf course development. Is there a restriction in the Thiel Farm deed which limits development of the area or dictates the types of uses that will be allowed?

7. The golf course development will require the loss of a huge amount of wooded area. Just because these resources are not protected by a resource-specific law does not mean that they are not valued.

18.2 8. The connector road is located on an active trail and the Pecks Brook crossing will negatively impact the fragile and unique ecosystem along the brook.

The project developer gave only cursory responses to comments on the Draft Environmental Impact Report. Please require that the project proponent meet a higher standard of compliance with MEPA than has been experienced to date.

Respectfully submitted,

Ann W. Dobrowolski

19

RECEIVED
OCT 06 1999
MEPA

195 East Road
Adams, MA 01220
October 1, 1999

M E P A Unit
Executive Office of Environmental Affairs
100 Cambridge Street
Boston Massachusetts 02202

Attn. Secretary Robert Durand

Dear Secretary Durand

Thank you for the chance to provide my input on the Greylock Center Project. This has been a long and at times unpleasant struggle with the extremists on both sides. There is a very small group of good people who want no development at all at Greylock Glen, and there is another group, perhaps not quite as small but just as decent and honest as the first, who want downhill skiing and even some who want a casino. Peter Webber and his staff have been tireless in their search for consensus among these folks. At the same time Chris Fleming has been open, honest and flexible. This project is a result of an extremely open process. Opponents to and proponents of every part of this project have met with him and all this input has resulted in a far better plan.

As a selectman, and a lifelong resident of Adams, this piece of land has been in our consciousness for all of my life. During my lifetime I have heard plans about downhill skiing, a tramway, a housing development and a casino. This plan has a chance to make a greater long-term impact than any previous plan. The direct property tax benefits to the Town of Adams as well as the size of the project are modest, only 225 out of 1050 acres will ever be developed. The real benefit comes with the environmental education portion of the plan.

The Town of Adams has undergone some serious economic perils since 1985 and 1986 when Ch. 676 was passed. The legislators saw at the time an urgent need for economic development, so urgent that the legislation carried an emergency preamble. Adams has the oldest average age population in the State. Our population has dropped from 12500 in 1970 to 9300 today. Our "Total Valuation of Real Property" has dropped over the last five years. The need for economic development today is greater than it was when this "emergency bill" was passed.

The people of this Town and their elected leaders recognize the importance of this project. This is represented by five unanimous or nearly unanimous votes at Town Meeting, as well as universal support from our Board of Selectmen. Previous plans did not enjoy such nearly universal approval from the local community.

What could have been a very rancorous process was instead very inclusive and positive. The environmental communities input is what created the concept of environmental sustainability at Greylock Center, and this is the concept that inspires the residents of Adams to support this plan like never before.

This site is located at the foot of the eastern (steep) slope of Mt. Greylock. It is also only .7 mile from McKinley Square (the center of the Town of Adams). The site was part of the first land settled by pioneers in the 1700s. Until 1986, when the site was purchased by the Commonwealth to fulfill the tenets of Ch. 676, the site was privately owned. Up until the late 1960s there were farms and homes and this site was a productive part of our community.

In the 1960s this one parcel of land was made up of 70 individual pieces of property with over 170 buildings. There was a summer camp (Camp Hamlin) owned by the Notre Dame Church. My late colleague, Selectman Joe Lefebvre grew up here in a family of 15 children. This land had activity and was productive for 200 years before the State acquired it. It is and has been an important part of our community.

This site is also one of the most scenic in Berkshire county. It needs to be protected. In the fifteen years since the state has owned the land there has not been any (until recently) stewardship over this land. The Town of Adams Highway Department has hauled hundreds of Tons of illegally dumped rubbish and tires from here. The brooks and streams are becoming choked with mud and silt from the unregulated motocross motorcycles and ATVs. In fact, the only natural pond on the property is now a cattail-choked mudhole because it is just downstream from a major ATV trail!

There are the remnants of several failed developments here. Foundations of never built hotels and condominiums from the 1970s need remediation. There are lift towers and the remnants of lights and snowmaking equipment. One area called the "Re-bar Jungle" is actually quite dangerous. During a recent walk here, Jim Leitch and I came across the remnants of a "cough syrup party" we found a campsite with more than a dozen cough syrup bottles.

The Adams Police Department is a typical small department, but they have used Motorcycles, Four-wheeled drives and even horses to patrol this site against dumping and ATV damage. Their greatest problem is however with vandalism and hooliganism. With no direct ownership, and no supervision, beer parties evolve into vandalism sprees. Picnic tables and outhouses have been tossed in the ponds or burned. This site cries out for stewardship! To simply leave this site as is protects nothing, to do nothing is an environmental sin.

The best part of this project is the sustainability portion. If this project called simply for a golf course, hotel and housing, the real long-term value would be in question. The addition of the environmental education portion makes this plan one that is truly greater than the sum of the parts.

The environmental education portion of this plan will provide links to the Town and will allow residents of Adams more Benefits. The first function of The Berkshire Institute and Natures Classroom will obviously be their education component. The second function is less easy to visualize, but is far more important. Their product is environmental excellence. It will be in their best interest to ensure that the project as a whole meets and exceeds, even sets new ecological standards. The customers who will be availing themselves of these two organization's services will be environmentally savvy. Both organizations will, by virtue of their own goals and needs act as a Quality Control for the sustainability of the project.

The D.E.M. is already investigating geo-thermal energy on the site as well as solar and photovoltaics. This project will use the most up to date technology in recycled building materials. Both the Berkshire Institute and Natures Classroom will be on the lookout for new ideas to incorporate into the design. Some of these new technologies may grow into new manufacturing business.

I am very excited about the "Berkshire Institute." Town officials met with their Board of Directors, environmental educators from Yale, Virginia Tech and UMass. They all want to be part of the environmental education at Greylock Center. These people will bring not only students and programs, but the will also bring an environmental awareness that can only serve to further provide stewardship to this site.

Nature's Classroom has put the proof in the pudding. [To John Santos: Thank you for allowing the children from Adams to experience your wonderful programs.] Children have always been the most important link in environmental education. Thousands of kids will experience and develop a respect for nature and for Mt. Greylock. They will be the future stewards of the Mt. Greylock Reservation.

The third component is the Parks College. Training in environmental sciences for DEM Police, Park Rangers, and Natural Scientists would take place here. Access to the reservation, the trails, picnic grounds and camping areas will allow for pilot programs, and be a further example of stewardship of the mountain.

All of the above components will aside from stewardship, help create a "marketable identity" for the Town of Adams. When someone mentions Dalton, Crane & Co. and U.S. Currency comes to mind, likewise Williamstown and the College, Lenox and Tanglewood etc. The Town of Adams wants to attract environmentally sustainable business. Some of the technologies that may be tried and nurtured at the Greylock Center can be produced by workers of the Town of Adams.

The MassMoCA has given North Adams a marketable identity. Our neighbor to the north enters the new century with a chance to grow and prosper. They have re-invented themselves while preserving their mill clock tower heritage. I believe that the tourist market that North Adams is tapping into is very similar to the upscale golfing Eco-tourist. The Greylock Center provides a necessary compliment to the MassMoCA.

In conclusion, I wish to point out again the importance of the Environmental Education component. I would urge that you consider approving the early action steps and allow immediate construction of the Environmental Education Center. The first and most important reason is to place a team of environmentally conscious folks working at the Greylock Center. Secondly, the more activity on the site, the better. It will be protected from vandals and those who illegally dump.

Thank you for your time and interest to this important matter.

Respectfully Submitted,

Edward J. Driscoll

Ed Driscoll, Selectman
Town of Adams

Printed on Recycled United States Currency

DF

20

OCT 08 1999

October 5, 1999

To Whom It May Concern:

I am writing to express my displeasure with the Greylock Center project and the Notice of Project Change (NPC). For a variety of reasons, I feel strongly that this project, in its revised form, continues to ignore the very principles of sustainability and environmental design mentioned so often by both the developer and the DEM when referring to the project.

Housing - The continued existence of private housing in the plan is out of character with the project's goal of encouraging recreation and the enjoyment of nature. By taking a large portion of the Glen and selling it off to private homeowners, the public loses access to some of the most beautiful parts of this area. Moreover, this housing does not appear to be different in any way from any typical suburban sprawl. It appears on the map as a subdivision of private homes, much like one would find in any major housing project. In no way does the housing add to the recreational value or natural beauty of the Glen or to its environmental sustainability (and I would argue that it does little for the northern Berkshires in terms of adding any economic value to the Glen) - instead, it exists only to help the developer make a buck.

The developer has also failed to clarify the nature of the housing: is it going to be inhabited by year-round families or will it be vacation homes? And what will be the environmental impact of having so many people living on the Glen? If full build-out were achieved, over 1,000 people could conceivably be living year-round on the Glen. What are the expected impacts of this major population addition? With highly increased car, foot, and pet traffic on the Glen, what will be the disturbance to wetlands, endangered species, and other sensitive areas of the Glen? All these need to be addressed extensively in the final EIR.

20.1 In addition, the state and the developer have never made a substantive response to the state-commissioned housing study, which found that there was no market for vacation homes on the Glen. The state needs to make an extensive evaluation and response to the results of that study before it can justify continuing to discuss housing as part of this project.

Golf - It's difficult to imagine a golf course that could qualify as environmentally sustainable. Any project that requires importing tens of millions of gallons of water each year would seem to fail the test of sustainability immediately. Moreover, despite the best efforts of environmentally minded golf course designers, a certain level of use of herbicides, fungicides, and fertilizers seems inevitable, and with those chemicals comes the potential for contamination of the wetlands that surround the golf course. The state and developer have yet to describe the amount or type of

20.2 chemicals that will be used. An outline of the chemical use plan for the golf course should definitely appear in the FEIR.

Two other aspects of the golf course also make its environmental impact considerable. First of all, a great deal of forest (at least 50 acres) will need to be cut in order to make room for golf. Much of this forest consists of mixed species of considerable age, so the loss of this forest would be a major blow to the many plant and wildlife species that make this forest their home. Second, the shift in the golf course's position from the DEIR to the NPC will require that blasting take place to level certain areas at the north end of the Glen. Blasting presents a variety of different environmental impacts - changes in habitat, disturbance of wildlife, potential for chemical residue from explosives to contaminate the blasting area. The plan's need to blast the east side of Mt. Greylock should make us all step back for a second and consider whether this project seems environmentally sound.

Trails - The current plans make the Glen much less accessible for hiking and other recreational

20.3 activities. The golf course surrounds the Glen area, making access to the mountain from the bottom much more difficult. Either hikers will be dodging golf balls, or else those trails will be closed during golf season; either way, those who wish to use the Glen for activities other than golf will lose out.

Early Action - The request for early action waiver should be rejected immediately. With a plan of this size and complexity, as well as such a long history, it is important that the project be carefully reviewed at every step. It seems ironic to request an exemption from environmental reporting rules in order to build an environmental education center. If anything, the environmental center should be more meticulously reviewed at every stage, to ensure that it is indeed as environmentally sound as possible.

In general, the Greylock Center project continues to be a bad idea. The Glen is an area of great beauty, animal and plant life, and spectacular views. The Center project does little to preserve these values. While the project is well-meaning in its attempt to boost the economy of Adams, there are far more effective projects that could be carried out in downtown Adams that could use this funding and have a much greater impact. The Glen's beauty and natural value help to make Adams special - turn the Glen into just another golf course, and Adams loses out. The Glen could serve a far better purpose by being used for environmental education and public recreation, rather than being economically exploited.

James Dubick
97 White Oaks Road
Williamstown, MA 01267

DF

Robert Durand, Secretary
EOEA
ATTN MEPA UNIT
100 Cambridge
Boston, MA 02202
EOEA # 11083

21

RECEIVED
OCT 12 1989
MEPA

Dear Secretary Durand:

This preferred alternative plan does not work for this property. The destruction of forest and habitat in the Thiel Farm area cannot be an environmental sound practice. It appears the revised plan is just another housing project. The Greylock Lodge should not be given an early action waiver until the whole project meets final approval.

Yours truly,

Kevin Dubois

To: ISMTPOutBound@itd.w4@servers["Foster-ENV, Dick" <Dick.Foster@state.ma.us>]
From: "Raymond Gargan" <rgargan@inarts.com>
Cc:
Subject: Greylock Glen
tachment:
Date: 10/6/99 8:02 PM

MEPA Unit
Dept. of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

This letter is in support of the Greylock Center project as it is currently proposed. As a resident of Adams, and as an environmentally concerned citizen, I feel that this project is important on two fronts. It will benefit the economic health of the town and the region through increased visitor dollars and increased tax base. But the more important consideration is the larger topic of sustainable development. Through its unique public/private partnership, the project has an opportunity to become a world--class living laboratory for the study and discussion of environmentally sustainable development practices and technologies. This mission will be supported, in part, through revenue generated by visitors, including the golf course, and by home sales in the resort component of the project. The concept of a resort/recreational facility and a center for environmental education working together in mutual support is an outstanding idea and one that the Town of Adams should be proud to be a part of.

In addition to the economic benefits brought to the town, I believe that the residents of Adams and the surrounding region will find that enhancements to the site will offer new recreational opportunities and open this beautiful piece of land for the enjoyment of many others. I fully support this project and encourage that it be allowed to progress as rapidly as possible.

Raymond Gargan
31 Burlingame Hill Road
Adams, MA
01220

DF

BERNSTEIN, CUSHNER & KIMMELL

P.C.

ATTORNEYS AT LAW

20 BANK ROW, SUITE 200 PITTSFIELD, MASSACHUSETTS 01201
Voice (413) 442-3773 Facsimile (413) 442-3774 E-mail:bckberk@bck.com www.bck.com

Jeffrey M. Bernstein
Stacey L. Cushner
Kenneth L. Kimmell *
Elisabeth C. Goodman **
Charles Harak
Cristin L. Rothfuss ***
Erin M. O'Toole

Main Office:
ONE COURT STREET, SUITE 700
BOSTON, MASSACHUSETTS 02108
(617) 742-4340
Facsimile (617) 742-0170
E-mail: bckboston@bck.com

* Also Admitted to Practice in California
** Also Admitted to Practice in New York and District of Columbia
*** Also Admitted to Practice in Connecticut

23

October 7, 1999

BY FEDERAL EXPRESS

RECEIVED
OCT 08 1999
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
MEPA Office
100 Cambridge Street
Boston, MA 02202

RE: Greylock Center, Adams, Massachusetts, EOEA No. 11083

Dear Secretary Durand:

This office represents the Berkshire Natural Resources Council, a nonprofit conservation organization which for the past 32 years has been devoted to the protection of natural resources throughout the Berkshires. We are commenting on the Notice of Project Change dated August, 1999 and comments filed by Specialty Minerals, Inc., dated September 10, 1998.

It is apparent from the plans depicting the Preferred Alternative, dated August 31, 1999, that a portion of the trails and a part of the proposed golf course are not on lands owned by the Commonwealth of Massachusetts. We understand that the Department of Environmental Management has not even entered into discussions with Specialty Minerals regarding a land purchase, not to mention reached agreement, and that any plans to take the property by eminent domain would be extremely unpopular and would prove to be costly. After all, Specialty Minerals is one of the most successful employers in the Northern Berkshires. Given these circumstances, the Department of Environmental Management lacked a legal basis to request public comment on a plan that includes property not under its ownership or control.

23.1

Under 301 CMR §11.01(c), the Secretary must consider the entirety of a project. The Secretary cannot approve the entire project until he knows the costs to purchase this additional

recycled paper

land, any environmental impacts from the purchase, and possible impacts from a failure to acquire this land. If additional land transfers are required to undertake this project, the proponent must so state. The proponent is prohibited from phasing or segmenting a project to defer or evade MEPA review.

The Notice of Project Change also fails to comply with MEPA regulations because it does not analyze the impacts of failure to obtain the land in question. The acquisition of this land will require additional Agency Action, as that term is defined in 301 CMR §11.02. The failure to identify the land acquisition and consequences if the land is not obtained means that the proponent has not properly described the Existing Environment and the Alternatives to the Project as required in 301 CMR §11.07. Under 301 CMR §11.07(h), the proponent is required to describe and assess the direct and indirect potential environmental impacts from all aspects of the Project, including acquisition. Without a description and analysis of the additional land required, the proponent has failed to assess the project impacts as required by 301 CMR §11.07(h).

Thank you for your consideration.

Sincerely,

Elisabeth C. Goodman

Elisabeth C. Goodman

ECG/lv

cc: George S. Wislocki (BNRC)
Jerry Lewis, Environmental Manager,
Specialty Minerals, Inc.
Jeffrey M. Bernstein, Esq. (Firm)

A:\letdurand107.bnr

Town of Adams · Massachusetts 01220-2090

PAUL HUTCHINSON
TOWN CLERK

TOWN HALL
8 PARK STREET
TEL. (413) 743-8320

DF

24

OCT 07 1999
MEPA

October 5, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Subject: Notice of Project Change
Greylock Center, Adams
EOEA No. 11083

Dear Secretary Durand:

Please accept this letter in support of the changes for the proposed Greylock Center project in the Town of Adams. This development has been on the drawing boards for a number of years and has been consistently reviewed and amended. It is now time for the Greylock Center to more forward to become a reality.

I would also ask that the Early Action waiver for Greylock Lodge be granted so work can begin. Greylock Lodge is one of the environmental educational components of the project.

The Greylock Center will show the world how to create a first class project in a beautiful, unspoiled area while preserving and enhancing what is left undeveloped.

When the Special Act authorizing Greylock Center was signed by Governor Dukakis an emergency preamble was attached so the legislation could take effect immediately. That was fourteen years ago, and the region is still waiting for the state's empty promised to be fulfilled. It is now time to act.

Very truly yours,

Paul Hutchinson
Town Clerk & Greylock Center
Advisory Committee Member

11083 OF

RECEIVED
OCT 05 1983
MED

Dear Sirs: -

My husband and I whole heartedly support the Greylock Glen project in Adams Ma.

Adams and the neighboring towns really and truly need this project We were behind it right along. We do not want outsiders Come to Adams and try to tell us what to do. We in Adams know what we need. We in Adams voted for it.

Thank You

Isabel Janik
Stanley Janik

DF

October 5, 1999

26

RECEIVED
OCT 0 6 1999
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge St., 20th Floor
Boston, MA 02202

Subject:: Notice of Project Change (EOEA #11083) for the Greylock Center in Adams, MA, submitted by The Commonwealth of Massachusetts Department of Environmental Management - August 30, 1999

Dear Secretary Durand,

Incredible as it may seem, the most recent plan submitted on the Greylock Glen Project has taken a giant step backwards! And it has gone so far backwards, that it has returned to the point where the ludicrous idea of housing was introduced to the project some three years ago. Oh yes, you can be assured that the housing still remains in the latest plan, along with the golf course (now on design No. 999). But that about ends it for project components. Gone are any of the morsels that were supposed to appease the locals while this project flew through the various reviews and licensing requirements prior to the start of the blasting and digging. The Town Park, the Town Park hiking trails, the Equestrian stable and trails, and the idea of a soccer field to support local sports are components that have been eliminated from the current plan. Remaining are the golf course, the housing project, and some educational fluff! Allow me to elaborate on some of the many concerns over this latest design proposal.

TOWN PARK The much publicized Town Park, where locals have been walking their dogs for the last twenty years, and where locals have been taking nature walks for the last 20 years, and where the DEM has been conducting numerous summer educational programs for the last few years, and where the locals have been taking their families for picnics and swimming for the last twenty years, and where the locals have been going to hit practice golf balls for the last few years, has now been deleted from the project. This small plot of land located in the center of the of the Glen, so sacred to the many locals who frequent it year round, will now be circled by golf holes --golf holes affordable to only those locals who can "swing" to the tune of $80.00 per round!

26.1

LUMBERING The latest plan of the Greylock Glen project has repositioned nine holes of golf to the north end of the Glen. Unfortunately, an estimated 60 acres of forest will have to be removed to accommodate the course in this area.

Additional lumbering will also take place along the northern side of lower West Mountain Road. This is necessary, because the new plan has earmarked that area for a number of duplex homes! What kind of a sustainable project is this? After three years of planning, is this the best that the developer can come up with? And how can the Massachusetts Department of Environmental Management (DEM) approve of such a plan when the removal of this much forest is involved? Isn't the purpose of the DEM to protect the state's forests?

26.2

HIKING TRAILS Anyone thinking about using the present hiking trails in the Greylock Glen after the project has been completed can forget about it. The golf course, which will be in operation for seven months of the year, will negate any of those hiking plans. The hiking trails that interact with the golf course cart paths and fairways will be unsafe for use. The Greylock Glen Project developer has foreseen this danger, and will close off these trails while the golf course is in operation …so much for hiking, walking, jogging, etc. at the Glen in fair weather!!! Wasn't this project suppose to provide something for the locals, as well as for the rich visitors who will come here to spend large amounts of dollars --dollars which will save the Northern Berkshire residents from the terrible life of despair that they now lead??

26.3

With this current design, visitors will be fortunate to have any access to the state's highest peak located in the adjacent Mount Greylock Reservation! Instead of this project being one that will identify the town of Adams as the "Gateway to our state's highest peak", it will become known as the one that built the "Barrier between the town of Adams and Mount Greylock." The centerpiece of this project should be a Visitor's Center located at the intersection of Gould and Thiel Roads. I have seen centers of this kind throughout New England and all along the Appalachian Trail. They are so busy that it is difficult to find parking at them during peak periods. The attraction to our state's highest peak, along with its most beautiful surrounding area, "The Greylock Glen Recreation Area", would bring many visitors to Adams and the Northern Berkshire area with a minimum of disruption to the environment.

26.4 **HOUSING PROJECT** The most recent plan of the Greylock Glen Project has relocated some of the housing to the north side of lower West Mountain Road. I understand that these are duplex homes. What will the construction of these homes do to the value of the beautiful homes located across the street from them? The owners of those homes have toiled for years to make them special for themselves in a peaceful wooded area. Now, with the project's housing development spreading down West Mountain Road, that peacefulness and privacy will be lost.

What prompts the protectorate of the Commonwealth of Massachusetts' environment, the Department of Environmental Management (DEM), to venture in to the real estate business? Why is the DEM involved in a project where housing is its **LARGEST** component? For that matter, why is the DEM involved in a housing project? Has the DEM's charter been mysteriously revised to now include the construction of homes??

PARKS COLLEGE This new addition to the Greylock Glen project will "serve as a state wide training facility geared toward providing workshops and seminars for state employees, city and town officials, nonprofit employees and volunteers, and private companies in environmental issues, Best Management Practices, permitting, stewardship and monitoring practices."

26.5 Why does the Department of Environmental Management (DEM) want to conduct environmentally related training classes in an area where they have **strongly backed** the development of a housing/resort project? This training facility should be conducted in one of the state's parks –where (I hope) environmental practices are still adhered to! It would be hypocrisy for the DEM to conduct these proposed classes in the Greylock Glen, where the unsustainable of all projects nears its construction phase!

EARLY ACTION WAIVER Once again, as was previously requested in the DEIR, the developer (GMA) and the Department of Environmental Management (DEM) have requested an early action waiver for the construction and operation of an environmental education center, to be known as Greylock Lodge. **This waiver should not be granted for a multitude of reasons.**

The new design is so different from previous designs that it is not feasible to start any construction until final approval of all of the component's relocations is granted. Relocation of the golf course will now require lumbering of over 60 aces of forestland. Blasting will also be required in the same area. Additional lumbering along West Mountain Road to accommodate the relocation of duplex homes will be required. How much forestland is going to be destroyed with this new design?

Along with the early construction of this lodge would be the disruption of West Mountain Road caused by the necessary improvements of infrastructure associated with the lodge. This disruption may prove to be unnecessary if the complete project does not go forth.

As I have stated in the past, construction of any buildings without approval of a final blueprint would only limit future modifications.

Sincerely,

Victor A. LaPort
25 Southern View Drive
Clarksburg, MA 01247

07

October 1, 1999 #1108

M.E.P.A. Unit
Dept. of Environmental Affairs 27
100 Cambridge Street
Boston, Ma. 02202

Gentlemen:

We are writing this letter to express our deep interest in the development of the Greylock Glen. Our hopes are that you will support this project and especially approve the early action waiver for the Greylock Lodge.

Ninety-nine percent of the people of our town have voted in favor of this project and want and need it desperately. It would be a boon to our local economy and hopefully add to our population which has been on the decrease.

The few people opposing this project are mostly from other towns. Adams has never opposed any projects that they wish to develop, we don't understand why they think Greylock Glen is any of their concern.

All the environmental concerns have been addressed and we urge your department to further this along, especially the early action waiver for the Greylock Lodge. Plans so far include the very best of qualified consultants for a world-class environmental development.

It is time to put a stop to the continuous and never-ending and pointless environmental complaints from a handful of nay-sayers.

Thank you for your attention.

Sincerely,

Mr. and Mrs. Robert Leitch
109 No. Summer St.
Adams, Ma. 01220

OF

October 7, 1999

28

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit
100 Cambridge St.
Boston, MA 02202

RECEIVED
OCT 12 1999
MEPA

Re: Greylock Center, Adams, MA. EOEA # 11083

Dear Secretary Durand:

I am a resident of Adams who lives just below the Mt. Greylock Glen property at the foot of Mount Greylock State Reservation. I grew up playing as a young person, horseback riding, hiking, snowmobiling, and cross country skiing in the Glen. I am writing to urge you to not grant the request for an Early Action for Greylock Lodge.

We need to carefully consider what we are doing up there before starting work. This early action will allow the project to start without thoroughly looking at all aspects of environmental and financial concerns. There are many questions the developers do not have answers for. In meetings I have been in with them they have said "that is yet to be determined"

This project turns a unique part of Adams into what we have in every other area of Massachusetts, more roads, more parking lots, more buildings, more lights, more traffic on roads that are residential, that will ruin the integrity of these neighborhoods and rural roads. This project is too big for this piece of land.

Right now the Glen is full of open fields places where you can go and sit in the sun and not hear a road. It is a quiet place where you can look up at two beautiful mountains and have total silence. From the top of Mt. Greylock when you look east you see a beautiful wild area below, if this project goes forward the Glen will appear as an ugly scare on the land below with the cutting down of at least 60 acres of trees for the golf course.

The Mt. Greylock Glen is a is a very unique part of the state that should be protected. Last winter, I left my house on a cold evening and skied through the apple orchard to the Glen. The moon was out and it shone on Mt. Greylock and its snowy mantle. It was quiet, no lights, no roads, just fields of sparkling clean snow.

There are not many towns left that have the kind of beautiful open space like the Greylock Glen. This quiet area of wildlife is a lovely sanctuary for people

to enjoy and reminds us of what this state used to be like many years ago. These kinds of areas we are loosing fast to urban sprawl. The public is crying out for quiet places to ride bikes, hike, enjoy a family picnic, swim and learn about nature. 108

I have lived in eastern Massachusetts and I know that urban sprawl has taken over so much beautiful land out there. If the dollar speaks wildlife and nature are plowed under. I hope that will not happen in Adams. What we are doing is bending over backwards and letting this developer over develop this property so he can make a profit. This project is too big for the amount of space it is taking. And the wildlife and natural beauty will again suffer because the almighty dollar speaks.

We have a proposed bike trail that is all ready to go, we just need to finish it. People would come from miles to ride on this trail. I know people that drive all the way to Northampton an hour away to use that bike trail. In Lexington Massachusetts people use that bike path then stop for an ice cream or dinner along the way. It is a great recreational asset to that town.

Yes we need to do something in the Glen to make it more attractive and user friendly to visitors and to attract people to town. A lodge and visitors center for recreational use would be a great asset to the Glen. There are many things we could do to this area to attract people to the town of Adams that would have less impact on the natural wildlife here. Signs from the Massachusetts turnpike and Rte. 2 would let people know about the Glen.

If someone comes here to mountain bike there are a few signs directing people to the trail heads, but out of towners have no way of knowing where the good mountain bike or hiking trails are. I know because I have worked in the Mt. Greylock Visitors Center in Lanesboro and up at Bascom Lodge on top of Mt. Greylock answering questions for tourists. People have come from the Mass Pike asking for a good place to hike, but there are no signs in place to direct people to the Glen, or the eastern side of Mt. Greylock.

The developers want to put all the buildings up in the Glen but there are many buildings downtown that could be made into places for people to stay with a beautiful view of the Mountain.

North Adams has done a great job with Mass MOCA and people are coming to this area to visit. They smartly recycled an old factory and turned it into an attraction. Visitors are coming to the Berkshires.

We have beautiful old buildings downtown that are empty. We have an abandoned hospital that the town owns, why not use that?? It is a on a hill overlooking the town and has a great view of the mountain. There is the

Capezzi Mill in town that was beautifully renovated and its retail space on the lower floor is mostly empty. We just need to spruce up the town and build connecting trails to the Glen. We would have a unique town with a unique recreational area connected to the top of the mountain.

I look forward to meeting you and sharing this unique area of my hometown with you when you come to visit.

Sincerely,

Heather Linscott

Heather Linscott

October 4, 1999

29

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Dear Secretary Durand:

Please accept this letter as an endorsement of the proposed development of the Greylock Center Project in Adams, Massachusetts. We write to reaffirm our continued support of this environmentally sound and sustainable project.

The Notice of Project Change report (EOEA # 11083) addresses public concerns in reference to preferred alternatives, wetlands, groundwater exploration and the consolidation of the golf course. We once again feel the developer has addressed these issues in ways that will enable this project to go forward.

In conclusion, we urge you to continue to support this project which will promote economic development, enhance the region and which continues to maintain the highest standard of design to protect natural and cultural resources.

Sincerely,

Wayne A. LoPresto, Vice Pres.

Wayne A. LoPresto
True North Financial Services
The Williamstown Financial Center
296 Main Street
Williamstown, MA 01267

DF

October 5, 1999

30

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street, 29th floor
Boston, MA 02202

RECEIVED
OCT 08 1999
MEPA

Reference: **Greylock Center Adams, MA**
EOEA No. 11083
Notice of Project Changes

Secretary Durand,

After having read the Notice of Project Changes Report EOEA No. 11083 I have come to some unpleasant conclusions and questions:

The developer went through the motions of inviting the public to participate by asking for its input and went so far as to put a plan (Greylock Center Modified Site Plan) in motion that **appeared** to be sympathetic to some of the public's concerns. It now appears that the developer is at the same "place" in establishing a plan (Greylock Center Master Plan look alike) as he was at the very beginning. Why have we wasted the time and the money only to find ourselves right back where we started??

30.1 **The developer** has completely surrounded The Glen (town park) with the golf course. The Glen has become a very popular recreation area for the town of Adams, the surrounding communities and the out of town/state visitors. What will this do to everyone's freedom to move about???

As I stated in my letter to Secretary Coxe dated 9/2/98, - "A project the magnitude of the Greylock Center should **not** be issued any waivers for any purpose at any time. I feel that by issuing just one waiver you are giving the developer the message that **rules can be broken**". Then the **rules can be broken** attitude will prevail throughout the progress of the project.

30.2 The study concerning the marketability of homes at the Greylock Center showed it to be very questionable. Does that study still hold true?? If so, why does the developer insist on making housing a component to the project??

30.3 Despite talk of sustainability, a private developer will make millions on the project, subsidized by Massachusetts taxpayers, while the state's park system remains underfunded and poorly maintained. Who and what is being **sustained** by this arrangement?

30.4 Is the connector road really needed?????

Was the six (6) million dollars that was original appropriated for this project restricted to be expended only at the base of Mt. Greylock Adams, MA or was it appropriated to be expended within the entire town of Adams and Northern Berkshire??

Is There a financial report regarding the spending of the original six (6) million dollars??

Please give close attention to all concerns regarding this project.

Sincerely,

Jean Marchio
25 Southern View Dr.
Clarksburg, MA 01247

Massachusetts Association of Conservation Commissions
"protecting wetlands and open space through education and advocacy"
Main Office: 10 Juniper Road Belmont Massachusetts 02178 (617) 489-3930
Western Outreach Office: 2 West Street Hadley Massachusetts 01035 (413) 584-2724

OF

31

RECEIVED
SEP 20
MEPA

September 16. 1999

Robt. Durand
Secretary, EOEA
100 Cambridge
Boston 02202

Attn. Dick Foster, MEPA Office

Re: EOEA #11083: Greylock Center, Adams: Notice of Project Change

We have no objection to the proponent's efforts to identify changes in the site plan before the EIR is published - although we may or may not find the changes objectionable in themselves. The same goes for whatever changes in planning may have resulted from groundwater exploration. It is certainly a good idea to keep the public abreast of ongoing alterations in the proposal.

However, we do object strongly to the request for an "early action waiver" in order to build both the full-sized hotel (Greylock Lodge)and the Environmental Education Center prior to the completion of the Final EIR. The need for facilities of this kind and size is still strongly questioned by some of the public. Moreover, with the site plan still up for major alteration (as demonstrated by the rest of the NPC), it would be foolhardy to proceed with major building at this time.

We oppose (3) of the NPC.

Sincerely,

Alexandra Dawson

Alexandra Dawson
Legal Affairs Director

Massachusetts Audubon Society
Legislative Affairs
Six Beacon Street, Suite 1025
Boston, Massachusetts 02108
(617) 523-8448

RECEIVED
OCT 07 1999
MEPA

32

September 28, 1999

Lieutenant Governor Jane Swift
State House, Suite 360
Boston, MA 02133

Dear Lieutenant Governor Swift:

I am writing on behalf of a group of citizens and non-government organizations —including Berkshire Natural Resource Council, MassPIRG, Environmental League of Massachusetts, Appalachian Mountain Club, Save Greylock Glen, The Sierra Club, and the Massachusetts Audubon Society—to request an appointment with you to discuss the Greylock Glen development in Adams, MA.

We have a number of concerns about the direction the project is taking, especially since it appears to be rapidly approaching the construction phase.

All of us have great respect for you as a former legislator and now a statewide public official. We would appreciate the opportunity to share our concerns with you, and to hear your views and concerns with regard to the Greylock Glen project.

Most of the half dozen or so people who wish to participate will be driving in from Berkshire County, so it would be most convenient if we could meet in your office around 1 P.M. on a day that would be good for you.

We look forward to your response to our request.

Sincerely,

Robie Hubley
Legislative Director

cc: Secretary Robert Durand, Commissioner Peter Webber.

Printed on Recycled Paper

DF

Massachusetts Audubon Society
208 South Great Road
Lincoln, Massachusetts 01773
(781) 259-9500

33

RECEIVED
OCT 08 1999
MEPA

September 29, 1999

Bob Durand, Secretary
Executive Office of Environmental Affairs, Attention MEPA Office
Richard Foster, EOEA NO.11083
100 Cambridge Street, 20th Floor
Boston. MA 02202

Dear Secretary Durand:

We are writing on behalf of the Massachusetts Audubon Society to urge strongly that you extend the comment period on the proposed Notice of Project Change for Greylock Glen in Adams, MA.

The project the Department of Environmental Management (DEM) announced last week is very different from the design in the Draft Environmental Impact Report (DEIR) of September 1998. During that period of a year until just last week DEM held no meetings of the Greylock Glen Advisory Committee.

The project change is not insignificant, and it is not clearly for the better. While care has been taken to avoid wetlands and rare species, the new golf course design intrudes into the Thiel Farm forest, some of which is very high quality mature growth, and some of the golf holes extend into topography that will require dynamiting bedrock, hardly what could reasonably be called an environmentally friendly recreation development. 33.1

Further, the housing plan extends the existing pattern of tract housing along West Mountain Road that might very well be called 'sprawl.' The rest of the project appears to be little more than a country club golf course, not much different from the other one, the private enterprise, in Adams. 33.2

For these reasons we urgently call on you to extend the comment period to allow responsible public comment.

In addition, because of the pervasive and significant changes to this project, MEPA should issue a revised scope of review for the EIR addressing new impacts associated with the revised project such as extensive forest removal and drastic alteration of topography by dynamiting. MEPA

should issue a new scope for the EIR and require a SUPPLEMENTAL DRAFT EIR instead of allowing the development to proceed directly to an FEIR.

Because of the drastic changes in the project plan, we also strongly urge that the request for an early action waiver for the environmental education center be denied. The project should not be segmented because the ostensible purpose of the project is to make economic development, environmental protection and recreation work together.

Thank you for your consideration.

Sincerely,

Robie Hubley
Legislative Director

E. Heidi Roddis
Environmental Policy Specialist

Massachusetts Audubon Society
208 South Great Road
Lincoln, Massachusetts 01773
(781) 259-9500

RECEIVED
OCT 07 1999
MEPA

OF

34

October 7, 1999

Bob Durand, Secretary
Executive Office of Environmental Affairs, Attention: MEPA Office
Attention: Richard Foster, EOEA #11083
100 Cambridge Street, 20th Floor
Boston, MA 02202

Re: **EOEA #11083, Greylock Center Notice of Project Change, August 1999, Adams**

Dear Secretary Durand:

On behalf of the Massachusetts Audubon Society, I submit the following comments on the Department of Environmental Management's (DEM) Notice of Project Change (NPC) for the Greylock Center project in Adams, Massachusetts. The NPC includes significant project changes and associated environmental impacts which must be addressed before any phase of the project proceeds to construction. The Massachusetts Audubon Society opposes the request for a Phase I waiver, and we strongly recommend that the waiver request be denied. We also request that the Massachusetts Environmental Policy Act (MEPA) Certificate on the NPC require that these comments be addressed in a new, stand-alone Draft Environmental Impact Report (EIR), and that the project not be allowed to proceed directly to a Final EIR.

The Massachusetts Audubon Society is a voluntary association of members whose primary concerns include protection of a Massachusetts environment that supports both wildlife and people. The Society is one of the largest independent conservation organizations in New England with a membership of 65,000 households.

The Society has been active in advising and responding to the planning process for Greylock Glen[1] for over a decade, beginning with the passage of the Enabling Act (Chapter 676 of the Commonwealth of Massachusetts Acts 1985) which charged DEM with this land disposition and reuse effort. Massachusetts Audubon is a member of the DEM Greylock Glen

[1] Greylock Glen is the name of the parcel of land where the Greylock Center project is being planned.

Printed on Recycled Paper

Advisory Committee.

These comments identify major issues in relation to key elements of the NPC, August 1999, on section 5.0 RESPONSE TO COMMENTS, and in particular on DEM's responses to Secretary Coxe's September 16, 1998 Certificate on DEM's Draft Environmental Impact Report.

The Massachusetts Audubon Society vigorously opposes the developer's request for a waiver to allow construction to begin on the 30,000 square-foot nature center building before the EIR process is complete. This would constitute an improper segmenting of the MEPA review process, and is especially inappropriate considering the remaining unsettled and controversial planning, economic and program issues surrounding this project.

Instead, the Society recommends that the Secretary of Environmental Affairs deny any waiver, and require DEM to redraft, re-file, re-notice, and re-circulate a new DEIR that addresses the key planning and economic issues, and associated gaps in the information currently under review.

While the Certificate on the Environmental Notification Form (ENF) requires that "The project includes a commitment to sustainable development practices in design, construction, operation and environmental programming," and declares that the DEIR should "discuss the stated goal of sustainable development and how that sustainability will be met," most of the
34.1 innovative or sustainable aspects of this proposal are merely suggested as "should be considered," "if feasible," etc. DEM should be required to address this key element , with commitments to specific project features that address sustainable development principles.

34.2 The Society asserts that a full economic feasibility study is needed before any ground is broken for construction, and further that such a study must include a comprehensive benefit/cost analysis to assure that public funds are being invested in an efficient, socially responsible manner. While economics is not normally within the scope of MEPA review, this is a publicly funded project, with economic development included as a goal in the enabling legislation. We do not believe that the economic purposes of the project can be separated from the environmental review process in this instance. Many of the project's environmental impacts stem directly from aspects of the project that are purported to fulfill the economic benefit goals of the project. If the economic benefits are not valid, the environmental impacts could and should be avoided through major changes to the plan.

The Society strongly questions the presumption that the housing component as described in the NPC will fulfill the declared expectations of this plan, or those of the Enabling Act (Chapter 676 of the Acts of 1985) to support the "successful realization of said recreational purposes," or that the housing will benefit regional economic development as mandated by the 1996 *Master Plan*. DEM's *Greylock Center: Housing Market Study* (completed on December 1, 1997 and released March, 1998) concludes that the housing component will not accomplish those goals. Massachusetts Audubon urges that the full text of the Housing Market Plan be included as

an appendix in a new, comprehensive DEIR. The Society calls for specific actions, standards and measures that will assure that the project from its inception, through all the phases of its development to completion, and in the project management following its completion, will be environmentally exemplary and meaningfully sustainable as it is proposed and purported to be.

GENERAL COMMENTS

The new project as presented in the NPC provides almost no value to the general public. As the project has evolved, it is exclusive to residents, people enrolled in extensive formal programs, golfers, and DEM staff.

Significant questions regarding this project have not been adequately addressed or presented in this NPC, nor has DEM, as the project proponent, developed well researched and objective responses to comments on the DEIR. Some of these questions require germane answers before DEM can meet the requirements of the EIR scope established in the ENF, the Secretary's Certificate, and the Enabling Act (Chapter 676).

34.3 While socioeconomic effects may not be within the usual scope of the MEPA statute, Chapter 676 did require DEM to develop and implement a plan for this site which would benefit the economic needs of Adams and northern Berkshire County. Therefore, economic benefits are prerequisites to be met before other conditions of the proposal come under review. The ENF Certificate urged that DEM conduct such an analysis and present it in the DEIR. The Society maintains that such a financial analysis and disclosure is necessary to clarify the purposes of the Greylock Center project and assure that those purposes are met. Since this project is supported with public funds it must be subject to a benefit\cost analysis and a comprehensive report of the results to assure the tax-paying public, that this is a responsible and desirable expenditure of state funds. Since this analysis has not yet been done, this NPC is out of order and premature.

34.4 DEM has not justified its promotion of the construction of up to 300 housing units. DEM has not submitted adequate evidence as to whether these units will benefit or detract from the Greylock Center project, or the regional, municipal or private economies of the Town of Adams, or northern Berkshire County. Three hundred houses could produce 600 new school children requiring twenty additional teachers at a cost, in the vicinity of $600,000/annum, and that just for teachers' salaries and benefits, not including additional school busses, maintenance services for twenty newly reactivated school-rooms, and administrative services. DEM has not justified in financial or other terms, the proposal to build 50 houses in Phase I. Research by the American Farmland Trust and others indicates that residential development in Massachusetts, and in general, demands more cost in municipal services than it pays for in taxes. There is no way to stop any housing at Greylock Center from becoming starter homes occupied by young couples with school-age children, and so, an economic burden to Adams, not a help. The Town of Adams reports that Adams's population has declined from 13,500 to 9,000. That must have resulted in a significant decline in occupancy of the existing housing stock of the town. A government initiative that fosters construction of new housing will capture demand which could

otherwise result in occupancy of the existing housing stock and direct benefit to Adams and the private economy. Capturing the private market for the benefit a public project cannot be construed as value added. Eliminating the housing component from Greylock Center while devising a program to assist rehabilitating and marketing the existing under-utilized housing stock in Adams would increase and improve environmental and recreational potential at the Glen, while providing the greatest boost to the town's and the region's economy.

The Greylock Glen Citizens Advisory Committee (GGCAC) voted unanimously, the Greylock Glen Master Plan requires, and both Greylock Management Associates (GMA) and DEM agreed, that any housing component would have to meet three criteria: (1) it must be functionally pertinent to the program elements of the project, (2) it must be sited, designed and constructed in an environmentally sensitive manner, and (3) it must contribute to the economy of Adams and northern Berkshire County by creating new market demand. The proposed housing in the NPC does not meet these criteria; it is indistinguishable from suburban sprawl, bears no relation to the programming, and cannot be shown to fill any market demand other than that which would be captured from the private sector. It has been argued at several public meetings, and most recently by Chris Fleming of Greylock Management Associates (GMA), that the housing is necessary for the developer to achieve a desired level of private profit. That appears to be the only remaining rationale for the housing that has not been nullified by independent evidence.

SUSTAINABLE DEVELOPMENT

The NPC fails to provide necessary information and programmatic details to back up the claim that the project has been justified according to sustainable development principles. No representatives of the Center for Environmental Technology (CET) were on hand at the September 30, 1999 presentations to explain how the design presented in the NPC would maintain or improve the sustainability of the project.

The NPC presents a radically new plan for the project which differs significantly from the project reviewed in previous MEPA documents. The superficial appearance of the new layout is that of a sprawling housing development along West Mountain Road, and a cramped golf course along Thiel Road. The NPC site plan has not been analyzed to justify the applicability of the term 'sustainable.' Furthermore, neither plan offers a program description sufficiently detailed to enable an evaluation of the appropriateness of the housing element.

34.5 To assure "sustainability," the plan for the project needs to incorporate detailed and measurable criteria, and enforcement provisions to guarantee the long-term management and maintenance of the project. Failure to establish future management criteria threatens the quality of the project, and could have significant negative impacts on the adjacent Mount Greylock State Reservation. A new plan for phasing project construction should be developed, establishing target dates and specific criteria to be met before various components of the development (especially the housing) may be undertaken, what conditions define the beginning and end of

each of the phases, and what defines completion of the project. This information should be required to be submitted within a new, comprehensive stand-alone DEIR.

The housing configuration advanced in this plan is not innovative or even progressive, but rather no more than one would expect where road-front house lots are developed as a matter of legal right. Insufficient detail is given regarding energy or material sources and sinks, sustainable technology or design, or materials and procedures. "Sustainability" is repeatedly promised, but not detailed, specified, designed or illustrated.

The housing proposed for Greylock is alternately described as permanent housing or as seasonal homes for recreational purposes. A state-fostered development of second homes surely cannot be reasonably construed as "sustainable." The allocation of state financial resources to development of second homes for relatively affluent individuals does not meet the test of item #2 in the definition of sustainable development. The commonwealth of Massachusetts currently estimates that it has between 16,000-24,000 homeless citizens who will most certainly not be served by this development. It is most particularly unfair and inappropriate for the Commonwealth, itself, to foster second homes for the affluent in the face of dire unmet needs of other citizens.

The new project comprises a commercial development with 40 hotel rooms, the 300 residences, and eighteen holes of golf. **The ENF Certificate requires "a detailed description of the proposed project" that "should clearly identify the proposed development program and the locations of the program elements" as well as "the goals of the project and how these goals will be met by the proposed program. It should also discuss the stated goal of sustainable development and how that sustainability will be met."** These requirements have not been met by this NPC.

6

For the project to be "sustainable," a new, revised DEIR must state the explicit definition of "sustainable" as it is applied to the project. A re-written DEIR, dealing thoroughly with the project as outlined in the NPC, should identify the measurements used to evaluate the project components and alternative design in response to this concept and definition. DEM must provide a detailed alternatives analysis, with evaluation of project and program elements in relation to environmental impacts and sustainability. Further, the project must incorporate management mechanisms that respond to social, economic and ecological feedbacks and reorient management toward sustainability. **A no-housing alternative needs to be given full evaluation** considering the questions that have been raised in DEM's Housing Market Report and elsewhere concerning the financial realities of the housing component. An alternative that simply relocates the hotel/conference center, the mountain cottages and the golf course, as described in this NPC surely does not deserve to be represented as a meaningful "sustainable" alternative; it simply transfers environmental problems from one part of the tract to another.

34.7

Many of the components of this problem were productively explored in the June 11 and June 18, 1998 meetings of the *ad hoc* Committee on the Demand Inhibitors identified by the

Housing Market Study. The committee was chaired by Adams Town Administrator James Leitch. Representatives of the Appalachian Mountain Club - Dennis Regan, the Northern Berkshire Chamber of Commerce - Lewis Popkin, Berkshire County Regional Planning Commission - Tom Matuszko, the Massachusetts Audubon Society - Robie Hubley, and the Massachusetts Office of Business Development - Matt Kerwood conducted a positive and creative discussion of such recommendations as improving linkages between downtown Adams and the Greylock Center site, increasing the physical and programmatic linkage with Mount Greylock State Reservation, creating a more tourist-friendly atmosphere in Adams and northern Berkshire County, developing the retail core of Adams to support and draw tourism, improving and increasing availability of in-town accommodations such as bed and breakfasts and inns, and cultivating a regional identity to draw travelers with disposable income. **The results of this effort should be evaluated and incorporated into a thoroughly new project design in a new DEIR.** The housing study raised the same concerns about the economic suppositions of the project, and identified some of the same problems and solutions identified by the ad hoc Committee, including making the Reservation a major focus of the programming, but prompting the town and region to provide as many of the goods and services through private enterprise as possible.

The public must support public values in the project, such as focusing on and protecting the Mount Greylock State Reservation and organizing environmental and other educational programs, while private enterprise is really better at providing the food, shelter, and the commodities of travel. **The results and recommendations of the Housing Market Study should be fully taken into account in thoroughly redesigning the whole Greylock Center program.** DEM should make a clear commitment of resources, and present a working plan to act on the recommendations advanced in the Demand Inhibitor sections of the Housing Market Study, to relocate as much of the economic activity of the program to the private sector of the Town of Adams and northern Berkshire County where it belongs.

34.8 **All land on the Greylock Glen property which lies outside the development envelopes**, especially those lands contiguous to Mount Greylock State Reservation, **should be transferred and incorporated into the Reservation.** If this is not to be done, DEM and the Commonwealth need to pay earnest attention to, and provide detailed explanation of, long term ownership, criteria for resource protection and continuation of "sustainability" measures, and management of undeveloped areas, including conservation restrictions retained by the Commonwealth. This NPC does not address these important matters, changes that would make the project environmentally sensitive, sustainable, and genuinely beneficial to the economy, not just for Adams, but for the whole of Northern Berkshire.

No reliable measures are offered in this DEIR that would prevent families with children from occupying the housing full-time. Therefore, if the housing component is to be further pursued, this document must be revised to incorporate a full analysis and presentation of the traffic, resource, environmental and economic impacts, with a realistic assessment of the cost to the Town of Adams to provide municipal services to the occupants of the housing component as

a normal primary residential development

In summary, the project as proposed will detract from the private economy of Adams and northern Berkshire, rather than stimulating the economy by overcoming demand inhibitors and adding value. The housing market in the region has been slow for years and remains so. The housing component of Greylock Center, if it is "successful", will capture all the demand that can be reasonably anticipated for the plannable future. Little or none of the existing private housing stock will be salable, nor will there be any significant demand for new housing outside the Glen. This contravenes the public purpose of the project and the legislative mandate assigned to DEM in Chapter 676 of the Acts of 1985. Greylock Center should leave the creation and operation of commercial support facilities including housing to the private sector in the Town of Adams and the surrounding northern Berkshires. A public/private partnership as described above could remedy these problems and turn Greylock Center into an economic, environmental, educational and recreational advantage to the town, the region and the state. Massachusetts Audubon will continue to cooperate with DEM to realize the more favorable outcome.

SPECIFIC COMMENTS

34.9 1. The link between Mount Greylock, Greylock Glen and the Town of Adams should be enhanced (see *ad hoc* Committee recommendations). None of the components listed here do that in any meaningful way.

34.10 2. Protecting "the unique scenic, natural, and historical qualities of the adjacent Mount Greylock Reservation" demand inclusion of viewscapes, thorough analysis, and mitigation measures in a new DEIR.

A restructured DEIR should specify what actions will be taken to assure that the environmentally sensitive and "sustainable" characteristics and features introduced during the development process will be sustained and enforced subsequently and throughout the lifetime of the resulting development.

3. The present development plan for Greylock Glen does not 'celebrate' but rather over-runs the natural and recreational resources available on the site.

4. Snow-making, requiring heavy equipment, consuming petroleum fuel, generating noise and impacting state-listed rare species, might be a 'want' but is most certainly not a 'need' (p. 1-11) and is surely not "sustainable." **The DEIR's discussion of the water use and environmental**

34.11 **impacts of snow-making does not meet the requirements of the Certificate of the Secretary of Environmental Affairs on the ENF.** Purchasing water from Adams is not a real economic benefit to Adams; depletion of the supply is a loss to the town, so the exchange is neutral. Massachusetts Audubon urges that the analysis of water budget alterations on the Glen, whether reductions or increases, sketchily begun in this NPC, be fleshed out in a new Draft Environmental Impact Report (DIER) for this new project. Further, whether or not the Adams

Fire District is registered to withdraw water from the Hoosic River, the impact of the proposed increase in withdrawal must be evaluated if the practice and this project is to be deemed sustainable. If the increase exceeds 100,000 gallons per day it should require a new permit under the Water Management Act (MGL Chapter 21G, Chapter 592, acts of 1985. 310 CMR 36).

Apparently the Greylock Glen site has not been thoroughly investigated for species protected under Massachusetts' Natural Heritage and Endangered Species Program and laws (pp. 3-4, 3-5). This is illustrative of the general failure of the planning process to date. The state acquired this land fourteen years ago, and has been working on development plans ever since, yet still has not conducted a comprehensive rare species survey on the site. Nevertheless, there is sufficient information to know that rare species are present on the site, even though their exact habitat locations and local population status are not fully known. Massachusetts Audubon strongly recommends that DEM and GMA, in the interest of environmental sensitivity and concern, abandon snow-making as an activity on Greylock Glen to protect its rare and endangered species, and the Glen's very special streams and wetland habitats (p. 3-1 ff.).

5. Providing residential facilities for students and full-time faculty, as well as day-time, weekend and summer programs for adults and children, is an appropriate and acceptable residential component.

6. As stated above, the Massachusetts Audubon Society deems as inappropriate and vigorously opposes granting the environmental center early action implementation status, prior to full MEPA review. Such an action would clearly constitute segmenting the MEPA process. The impacts are not insignificant, nor can the environmental center be severed from the remainder of the project for planning purposes. It would be wrong to start any component before completion of the MEPA process in the light of the economic uncertainties and the program vagueness of the DEIR, the NPC, and this project as a whole.

34.12 7. Neither the DEIR nor the NPC specify what constitutes a 'multifamily' unit or the number of units in a multi-family residence. A new DEIR should specify how many families comprise 'multi,' whether a 'dwelling' is a 'unit,' and how many families the total residential component will accommodate in the aggregate.

34.13 8. Both the DEIR and the NPC fail to present the viewshed analysis necessary to demonstrate the assertion that the location of the village will minimize impacts from surrounding viewsheds. The viewshed in question, it should be made clear, is the very foreground of the view from the major visitor area including the war memorial at the peak of the Commonwealth's greatest eminence, Mount Greylock. Without a viewshed analysis it is impossible for DEM to conclude that it has taken all measures to protect for the citizens of Massachusetts the view to and from greatest mountain. This should include a high-level graphic simulation and accompanying analysis incorporated in a redrafted DEIR.

9. With the development of 300 private proprietorial residences many instances will occur where

a visitor will feel prohibited from using adjoining lands, and owners will feel imposed upon by visitors. Between the land area restricted by property and privacy rights, and the area consumed by the golf course, little of Greylock Glen will remain accessible to the public as a whole.

34.14

34.15 10. The economic impacts of the project to the northern Berkshire region must be evaluated thoroughly in a new, comprehensive DEIR. According to the Enabling Act, the project is intended to be a benefit to northern Berkshire County. A new DEIR must completed to specify and quantify the benefits to Clarksburg, Williamstown, New Ashford, Florida, Savoy, etc. It seems clear that regional benefits have not been adequately investigated, evaluated or documented. These issues need to be resolved before the further expenditure of public funds.

34.16 11. If DEM is claiming the housing and commercial development is necessary to finance the recreational component, it should state that explicitly and provide the necessary financial analysis to support that proposition.

12. The Society is confident that a beneficial and economically feasible project is possible, depending on the relationship to the State Reservation as its focus and enhancement of the Reservation as its purpose, and relying on the Town of Adams and northern Berkshire County to generate the residential, commercial and service facilities to support the public facilities on the

34.17 Glen. The new DEIR should support statements regarding economic conditions in Adams and northern Berkshire County with current data.

34.18 13. A new DEIR should report and comment in detail on the results of **the Housing Market Study** completed on December 1, 1997 and released March, 1998. That report **established that there is no existing market demand for the housing proposed as the financial engine of this project.** DEM has asserted that housing sales are necessary for financing this project. The Housing Market Study identified Demand Inhibitors as discussed above that made the points in Realtors's terms that the Town of Adams and northern Berkshire County need to make changes to encourage and accommodate tourism. Massachusetts Audubon has been making the same assertions for a long time, and repeats them now. Until the demand inhibitors are overcome the Greylock Center project will not succeed, and threatens another debacle on the site. When the demand inhibitors are overcome, it is foreseeable that the private sector will be able, profitably, to provide for the needs of new visitors, and the Glen can serve its highest public purposes.

34.19 14. **A thorough No-Build alternative analysis, called for by the "Certificate of the Secretary of Environmental Affairs on the ENF", May 12, 1997, must be conducted and presented in a new DEIR.** It must be considered whether the initial conditions have changed significantly during the planning process so that the purpose or means are no longer appropriate. The applicant should be required to conduct a meaningful alternatives analysis, detailing and analyzing real alternatives in a responsible manner. A new DEIR should present data on the present economy of northern Berkshire County. It should evaluate whether the historic economic decline trends are still holding throughout the County, or whether some municipalities have been successful in reversing the decline. If some have been more successful at reversing the decline

than others, the basis for their success should be presented. Lessons can be learned from them about what will work.

15. The Massachusetts Audubon Society observes that many recreational opportunities are available and being utilized on Greylock Glen now, without the extensive development proposed by this plan. The real question is whether the development will enhance or detract from existing recreation, considering that recreation is the central value proffered in the Enabling Act (Chapter 34.20 676 of the Acts of 1985). Perhaps the Town of Adams and northern Berkshire County would do better if DEM, the developer and the public were to reevaluate and redesign this project to enable and enhance the recreation that people have already identified and valued by their actual use of the property.

16. Neither the DEIR nor the NPC provide pre- and post-construction stormwater runoff calculations sufficient to determine whether development on the Greylock Glen property will exacerbate flooding downstream. This information should be included in a new DEIR.

17. Stormwater Best Management Practices (BMP) should be specified for roads, parking areas, 34.21 the golf course and the village. The golf course will alter vegetative cover to short, compact grasses that are more susceptible than the existing natural vegetative cover to sheet flow and erosion, and the runoff will be contaminated with vegetation control chemicals. **The DEIR does not meet the conditions of the "Certificate of the Secretary of Environmental Affairs on the ENF" in this regard.**

18. It seems odd (p. 1-8) that "wetlands in the central portion of the site were somewhat more extensive than previously **assumed**". It would seem reasonable that a project designed to 34.22 exemplary environmental standards would have began with a detailed and accurate determination and mapping of regulatory wetlands, rather than assumptions as to their extent. As often occurs, the untested assumptions created unattainable expectations for the project. Even in the northern portions of the site, the majority of the impacts to wetland buffer areas will be caused by the relocated golf course, and in the central portion of the site most of the golf fairways encroach on the wetland buffer zone. The #5 fairway is almost entirely within the buffer zone (p. 2-18). In truth, in the words of this NPC, itself, "there is no single area, without use restrictions, that is large enough to accommodate a golf course." (p. 4-6)

Finding, after fifteen years of project planning, that the wetlands would not accommodate a golf course in the expected configuration, creates a troubling and potentially expensive impasse, at a late hour in the expected planning and design process. In retrospect, the history of the project's development creates the appearance that environmental protection and sustainability have been rationalizations, after the fact, of decisions made in the usual arena of potential for profit. That is not what the enabling act called for. And yet, natural features of the Hoxie Brook watershed, in the area proposed for the relocated golf course, are not well delineated, and 34.23 boundaries of portions of the Hoxie Brook wetlands have not been accepted by the Adams Conservation Commission even yet. Confirmation of wetland boundaries in this area are not to

be sought until the Notice of Intent for Phase I construction (p. 2-9). Meanwhile, great pressure is exerted to rush through major land-use changes with significant impacts: squeezing golf holes together, tearing down a large area of highly scenic and environmentally valuable forest, intruding into off-site property without apparent right, threatening the safety of trail-users and the liability of golfers, and requiring such drastic measures as dynamite to achieve landform alterations right at the foot of the Mount Greylock.

19. The Massachusetts Audubon Society commends the effort to consolidate structures into the village complex, and suggests that the practice be extended as far as feasible, to include any housing.

34.24 20. The Parks College concept (p. 1-21 ff.) has not been presented with enough specificity to allow any more than speculative comment. A location in the center of the state, such as in the vicinity of Worcester, would reduce the environmental impacts and costs of transportation, at the same time as providing equal facilities and access to many DEM sites such as Wachusett Mountain, with educationally valuable resource management problems and opportunities for real improvement in staff training and abilities As presented it has the appearance of a contrivance to enable DEM to channel state funds into the Greylock Center project.

25 21. All the proposed impacts to the Riverfront Areas on Greylock Glen appear to be marginally necessary, especially the Connector Road. Massachusetts Audubon urges that GMA, DEM and the Adams Conservation Commission re-evaluate these, making a strong effort to redesign those development features to be more environmental by keeping them out of the way of the excellent brooks which are a great natural asset to the Glen. A thorough alternatives analysis for avoidance and minimization of impacts in Riverfront Areas is necessary for compliance with the Rivers Protection Act.

COMMENTS ON THE RESPONSES TO MASSACHUSETTS AUDUBON SOCIETY DEIR COMMENTS

1. The NPC comments do not respond to the results of the Greylock Center: Housing Market Study, which confirms what has long been clear, that there is no market in northern Berkshire County for the kind of housing proposed to be constructed on Greylock Glen. Responding that there was no developer response to an RFDP without housing does not mean that the housing will support the project if there is no market for the housing. That conundrum must be responsibly resolved before house construction is started at Greylock Glen.

2. The response evades the failure to provide ascertainable benefits to any municipality of northern Berkshire County except for Adams, and the claims of benefits of the existing proposals to Adams are questionable.

3. The Society emphasizes that a full viewshed analysis is necessary to protect the State

Reservation from the visual impacts of this large project. Large scale development is proposed from one end of the property to the other, and often the view of Mount Greylock from large buildings such as the hotel is hailed as an asset. Such views are reciprocal. They certainly would benefit the hotel but almost as certainly will not benefit, and might harm, the view from the Mountain, which is the greater value to be protected. The plan offers frequent verbal assurances on a range of environmental values, but many of these values including protecting the viewshed from Mount Greylock, have not received the level of planning effort that would enable the reader to evaluate the consequences or demonstrate the validity of the assertions of the text.

4. Again, the text promises that the golf course "should be designed and operated on the pioneering edge of the 'green' golf course industry", but provides little detail that would demonstrate that DEM's precatory statement has any substance or carries any weight. The new design for the golf course creates major design, construction and operational problems which have not been responsibly weighed or presented. The golf course will stand as a conspicuous element of the project from the peak of Mount Greylock, and a statement of the real intentions of the development to the visitor.

5. A new, comprehensive DEIR should be drafted to detail and incorporate measurable standards for sustainability. Otherwise 'sustainability' is little more than a trade mark.

6. It is not justifiable to dismiss the call that the new project plan be given a thorough analysis by the simple assertion that there are "fewer environmental impacts" (p. 5-8). Thorough reading of the NPC does not support that assurance.

7. The assurance that the golf course has fewer environmental impacts because it is more compact flies in the face of the listing of wetlands impacts, potential effects on state-listed species, hazards to hikers and resulting liabilities for golfers, prohibited crossing of private lands, and the necessity for dynamiting the landscape.

CONCLUSION

This NPC, as was the case with the DEIR, does not adequately address planning issues such as "sustainability" raised by the GGCAC and CET, the findings of DEM's Housing Market Study, the scoping requirements of the ENF Certificate, the DEIR Certificate, or the requirements of the Greylock Glen Enabling Act (Chapter 676 of the Acts of 1985). Therefore, the Society requests that DEM be required to draft an entirely new DEIR addressed to the specifics of the project as sketched in the NPC. The Scope for the EIR for this project should address all of the social, economic and environmental issues identified in these comments.

For additional information or inquiries regarding Massachusetts Audubon's position or involvement in this project, please contact Robie Hubley at (617) 523-8448.

Thank you for your attention to these matters.

Sincerely,

Robie Hubley,
Director of Legislative Affairs

E. Heidi Roddis,
Environmental Policy Specialist

cc. Department of Environmental Management
Adams Board of Selectmen
Adams Conservation Commission
Berkshire Natural Resources Council
Environmental League of Massachusetts
Appalachian Mountain Club
MassPIRG
Robbie Sanoff, Foley, Hoag & Eliot
Rene Laubach, Mass. Audubon Berkshire Sanctuaries

OF

RECEIVED
OCT 12 19
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit,
100 Cambridge Street
Boston, MA 02202
Re: EOEA No. 11083

35

Dear Mr. Durand:

Please allow us to express our disappointment with the latest plan for the Greylock Center. The Notice of Project Change is a dramatic change from previous intended uses of the site, and, in fact, is such a departure that if you decide to let the developer and the DEM move forward with the plan as it exists, we would ask you to have them start the environmental and other review processes from the beginning.

Further, this plan should not be granted any waivers of any kind until all of the questions about this project have been satisfactorily addressed.

The future of our community will, to a large extent, be determined by the outcome of this project. The Notice of Project Change raises far more questions than it answers about what this project means and how it will be carried forward.

34

Finally, we ask that you require of the developer and the DEM a full financial and economic analysis of the project's feasibility before any work begins.

Sincerely yours,

OF

RECEIVED
OCT 12 1999
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit,
100 Cambridge Street
Boston, MA 02202
Attn: EOEA No. 11083

36

Dear Mr. Durand:

Please do not grant an early action waiver for this project. This is a totally new plan and needs close examination before any construction should begin.

I am also very concerned that the developer has said he does not have enough money to finish this project. Do we really want to have yet another developer try and fail on that property?

36.1 I don't think that it is a good idea that the town of Adams is now providing all of the services for this project including our precious drinking water for a golf course. In addition the golf course is located where much of the day use of this property now takes place. It will also require, according to the developer, blasting of the hillside to complete. This does not seem very environmentally responsible.

36.2 I am also concerned that the houses are now set up like a typical housing development instead of grouped together as has been promised all along. One person's house will be just a few hundred feet from Peck's Falls. Since when do we give our precious woods and wetlands to a developer to make houses and golf courses?

Yours truly,

Mike Moncecchi

OF

37

RECEIVED
OCT 12
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit,
100 Cambridge Street
Boston, MA 02202
Re: EOEA No. 11083

Dear Mr. Durand:

Please stop the DEM and the Developer of the Greylock Center project from destroying this beautiful property. It was one thing when the project was small and really was friendly to the environment, but now it is a horror.

There are houses all along the route up to the Greylock Ramble, and also along Pecks Brook, one of the nicest places in the world to escape the summer heat. We will not be able to use most of the land because it is going to be part of a golf course we could not afford to use even if we played golf.

The golf course is now so spread out that almost all golfers will use carts instead of walking, which means more paved roads for the carts to travel on. How is this environmentally friendly?

Also, they have ignored the fact that there is going to be a great rails-to-trails conversion within a mile of the project which could, if it were linked, bring hundreds of walkers, joggers, and bikers to the property to enjoy its natural beauty.

They will have to blast out the hillside to accommodate the golf course because there are so many wetlands on the property, leaving the project stuck between a rock and a wet place, and skirting the intent if not the letter of our environmental laws.

Please consider the beauty of the property and its proximity to the state's oldest and best reservation. Help us create the kind of legacy we would be proud to leave for our children and grandchildren.

Yours,

William M. Moncrief

I wish to respond to the Notice of Project Change as it pertains to the proposed Greylock Center project (EOEA # 11083). This project, in my opinion, has had more makers/changes than Elizabeth Taylor. What does this constant need for changing scenarios really mean? As a person educated in a land management field (geography) I turn to a guiding principal of all development schemes; that being the concept known as site/situation. In short, this concept looks to the site where development is to take place and impose the situation/footprint onto it. As I try to piece the Greylock Center development into a cohesive/workable project I seem unable to complete this elusive puzzle. Things just don't seem to fit!

The need for continual project changes to the Greylock Center project's footprint has had its' basis tempered by input by concerned citizens. This type of give and take is a healthy exercise and is mandatory in attempting to mold a project built on consensus. However, I feel that emotional/compassionate pleas put forth by proponents of this Project are being formulated on unrealistic expectations and/or supported benefits to be realized from this resort development.

Much of the change which has been presented in the new scenario does little to improve the Project as a whole. Citizen input has had little to do with the reconfiguration of nine golf holes on the site. These changes were dictated by wetland considerations which are under the rule of the Massachusetts' laws regulating wetland areas. The area suggested for use for restructuring the golf course layout was really the only place on the site where this change

could take place. This area is presently a forested area with a mix of mature mixed-hardwoods and some plantation pine stands. This area also contains mu h 'edge with rock outcroppings. It seems counter productive in a project which proposes sustainablit; is its' centerpiece theme to be cutting down acres of trees which sustain wildlife habitats and assist in the absorbtion of run-off water which abounds as it hushers off the mountain.

Another premise which should be carefully scrutinized in this Project is the physical restraints for proper and safe access to the site. There has been much said and many comparisons made involving profitable and successful esorts in New England and that the Greylock Center an become another premier resort destination. The ain factors which may disprove this theory hinges n the physical geography and historical background of he Town of Adams. The high majority of "big name" esorts in New England and throughout the world ere started in areas where a natural resource (i.e. ountain, lake, etc.) was present. In an historical ontext, these areas were "searched out" by enter- rising business people with an early vision and an ngaging idea. There was a much more practical nd workable process put forth during these resort evelopment build outs. Most resorts were started n areas that were sparsely populated and central ervices, infrastruture needs, road building and other menities which go hand and hand with resort estinations could be adequately addressed. This scenario llowed for a more harmonious and manageable evelopment scheme. However, in some cases over evelopment has stripped the cultural/societal

"togetherness" of agrarian communities as open farmlar space has lost there red barns to contemporary housir sub-divisions and "condos." Let's take a look at Adams has (•)poises itself for this proposed development. Adams "roots" began like those of most New England settlements Early settlers began to farm in this area until the dvent of the industrial revolution when entrepreneu sed the immense water resources and immigrant abor force to create a "booming" economic base predicate rimarily on a textile, paper, and mineral based economy hen the "bottom fell out" and the industrial base which rove the economy vanished, Adams' along with many ew England communities faced a challanging obstacle hat being how to reengergize our economic base. hat's where the Town now stands and has stood for me years. Can the tourist trade fill this void? I lieve that it can. However, it will be difficult and rhaps unrealistic to presuppose that this resort ill fill this gap without adding more of a social and conomic burden to this community. As for any long stablished community like Adams our road networks, ltural background and sense of "oneness" are all well ntrenched. We are a Town with a rich steeped istory and proud of our past and aware of the act that the future will bring changes as it does i LL aspects of life. Change is inevitable. But change rtainly needs to be conducted in a manner where ality of life issues are brought to the forefront.

The Greylock Center is to be situated on a 1,063 re parcel at the base of Mt. Greylock, the Commonwealth' ghest peak and oldest State Park (est. in 1898). The t Greylock environs are recognized by all as a state easure in constant need of monitoring in order to

reserve its' unique and critical attributes as a monumen
or all who seek the solitude and "relaxing" spirit it
ossesses. Townspeople have viewed this Mountain
hroughout history with a sense of love and myster[h]
s the varying weather conditions dictates its' appearanc
nd moods. In some respect the Mountain tempers the wa
e feel and who we are. It has a strong but subtile
nder tow in its' majestic charm which makes Mt.
reylock the Commonwealth's "crowned jewel".

The Town of Adams' is a community made up of closely
nit neighborhoods and maintains a quaint and picturesqu
own town setting. Little has changed since an urban
enewel project took place many years ago. Because of
he Town's physical make-up and positioning of Roads
nd dwellings little can be done without much dis-
uption or without much cost.

The Roads that lead to the Greylock Center par[k]
vhere traffic will pass will directly impede on the
iveability/quality of life issues which I have eluded
o. The Roads transverse through narrow thoroughfares
nd long established neighborhoods. Because of this fact
here is <u>no</u> reasonable way to resolve this <u>very</u>
ressing matter. This point needs to be driven home
ime and time again!

Another interesting fact which has surfaced regard-
ng the citizenry of Adams' is the demographic profiling
hich shows the Town having the most elderly population
ithin Berkshire County. Proponents of the Project
seem" to be putting a negative spin to this fact and
sing this as a crutch/leverage for building a resort.
view this fact in a completely different manner. I see
his fact as clear evidence that our community has been

kind and sensitive to the needs of our elderly population. What better testiment to any Towns' quality of life than seeing to it that our "golden agers" are cared for and protected. I think this is sure proof that Adams' is a safe community which looks to the needs of ~~the~~ its most vulnerable individuals. Along with showing the way for the elderly Adams does well for its' children and remains a "good" place to raise a family. What will the consequences be if a full-fledge resort complex is built? It will change the favorable, close knit nature of our residences. Make no doubt about it. There will never be a formula which can quate how assumed financial gain from building the reylock Center will translate into the way our uality of life is affected. Is a lower tax bill worth ch or enough to perhaps jepordize Adams' sense f community?

Another point of fact which seems to be being used s a "bargaining chip" by proponents of the Greylock nter project is ~~xxx xxxx~~ that our population base is ntinuing to dwindle. This situation, in part, is due the lack of employment opportunities in the mediate area. This is certainly the case. Already he Town has lost a generational "heartbeat" as gh/school/college graduates are leaving the area search of "greener pastures." Let's remember wever that this trend is a natural progression ich is taking place in numerous communities throughout is country. In light of today's telecommunication and igh technology based industries people yearning good

alaries will be required to relocate in order to pursue heir employment ambitions. The down side of this :xodus of young adults is clear. With their exodus also ces creative energy and foresight needed to assist in t' owns' rejuvenation efforts. Yet, the building of a esort complex in Adams' will have <u>little</u> impact on eeping college educated individuals in Town. The build- ut scenario will be advantageous for construction vorkers and tradesmen but after the development is p and running I forsee most employment opportunities eing of a seasonal nature. Service sector jobs usually o not pay well, and are without ammenities such as ealth insurance, sick time, and vacation benefits. here is a very fine line between job creation due c the now awkward business agreement or proposed artnerships. The whole partnership agreement has ecome much too cumbersome. Beside the D.E.M. (public nd GMA (private) there are other private sector, non- rofit groups, and institutes (I think) vying for a iece of the pie." There seems to be too many competing nterests in play in this development team. Each vested nterest group will have differing expectations and trategies for meeting their expectations/goals. It wi e difficult if not impossible to make all interest roups "happy." Who will be in charge and what will appen if partners expectations are not met? Will the .E.M. agency be held holding the bag if problems surface here have been many companies/corporations that have hown initial interest in this project. Some of the interested arties were "big name", high caliber development corporations. In time, after reviewing the project hese firms parted company. Why? Perhaps

these knowledgeable developers who have built resort complexes recognized the many shortfalls of attempting to develop this parcel and the limited prospect for total economic solvency. The GMA group has already stated that their economic backing is limited. This seems to play out as they have invited others to share in the development hoping that these other concerns will step to bat to fill this financial gap.

Is the economic benefit clear at hand for this project which is estimated to cost 100 million dollars or more when it reaches its' build-out pricetag? Who will reap the rewards? In short, where's the beef?

When I try to gage the economic engine which is to propel the Greylock Center project to its' build-out cost of 100 million dollars, I become completely baffled by this prospect. If you can prove that an eighteen hole golf course, an educational center, camping/cottage sites, an inn, cross-country skiing facilities, and other recreational pursuits can spearhead a development of this magnitude I'll eat my hat. I forgot, it's the housing component stupid that will be the economic driving force behind the Greylock Center resort project. Let me state my strongest objection to the building of housing units as the mean/catalyst which is to drive this project. The idea of the D.E.M. becoming a partner with GMA and allowing the construction of houses on property owned by the State is very offensive to me. I can not understand how and why an agency given the mission of being stewards of our public lands is getting into the business of developing its' property in such a market as that of housing. It just is not right, period! As soon as houses are built on the site, I believe that this will make this development no different or unusual

381

han any other resort setting which entertains a housing
mponent. The housing market is and will continue to be a
olatile market. Changes in economic cycles make
ousing stocks rise and/or fall. The consistency of
aintaining a strong and viable housing market is a very
ffy "proposition. Let's suppose that the GMA group finds
me buyers for homes and constructs them on the proposed
ilding lots. In time, due to unforeseen circumstances/
vents the owners/renters/time "sharers," etc, may wish
"jump ship" and sell their homes/units. What will
r sale signs on already existing homes do for future
ture building growth on the Greylock Center parcel?
lso, the "buzz" word; "sustainability" has many
nnotations associated with it. First to come to mind
money. I still do not know what will make these houses
y different from yours or mine. If these homes are to
erected to strict standards with sustainability features
corporated into the structures the cost per unit will be
ry pricy." To institute alternative energy sources, materials
nd/or building codes to meet a sustainable criteria seems
put the perspective home buyers in the "high range"
conomic bracket. Will these homes be priced in such a manner
hat allows only the "elite" to purchase them? Do we
ally need them? I think not! After reports/studies
ve shown that there is no appreciable market for second
omes in Adams' I wonder how the developer can justify
ilding a single housing unit? Also, the homes and their
sitioning will have a profound effect on the way one
ews Adams' from the Summit of Mt. Greylock. The
hole build-out that will dash the parcel with
ructures was once (I think) to be done in a manner
hich would have "hidden" the buildings and
hus lessened/or obstructed the "viewshed" from the

eak. Is this still the case :
If homes are built there should be a clause written
to the building specifications which would not allow
d burning to take place. Inversion factors caused
y weather conditions would create a layer of smoke
o lay over the site. Already this situation is
uit noticeable during the cold weather months
s one views the community from high elevation
reas. Also, there needs to be safeguards put into
lace which will not allow light litter to obscure the
ight sky which will in turn ruin the magnificent
houette of this stoic peak. The housing component
f this project is too risky of an undertaking and
rays wildly from the mission and conscience of the
epartment of Environmental Management.
Some will say that Chapter 676 of the Acts of
985 mandated this need to incorporate housing in
rder to bring this regional economic development
roposal to fruition. I still have not seen or heard of
ny guidelines put forth that outlines the impact in
erms of a monetary value which needs to be realized
hrough this public/private partnership venture. What
ill constitute success? My thought about the Chapter
76 Act tells me that there was never a well thought out
an which addressed the extent to which this project
eeded to stimulate the economy of the Northern Berkshi
egion. It appears that the wording is vague and may
ave been presented in that manner because the powers to
e at the time of the Acts inception had no way of clarifyir
uch an open-ended statement. The long held virtue of thi

Act that has continued to guide this project in a haphazard
lirection should be ~~xxxxx~~ repealled. Laws/Acts that
nave been created which contain "loose" language
such as Act 676 should be rethought and revisited.
s certainly in the realm of government proceedings
o repeal Acts. This is one Act which contains language
nd sets a standard which can not be ascertained
hrough its reading.

As I continue to try to visualize this developments
footprint on this 1,063 acre parcel and the astronomical
ost of bringing this resort complex to its' fulfillment
tatus, I wonder if this is a realistic goal. After
issecting and dissecting this plot of land the develope
tates that "approximately" 240 acres of this property
s developable land. To think that this project
arries a build-out price tag of 100 million dollars
r more and that only 240 acres is usuable/buildable
creage the cost for development per acre is astonish

In times such as these when our natural resources
re becoming more taxed and scarse it becomes incumben
n our generation to protect our lands. Protection does
ot mean doing nothing on this site but it does mean
oing so with the long-term wisdom of good land
tewardship in mind. In the long run the concept of
ustainability is best incorporated in development
hich stresses education, recreation, and is geared to
amily use, and is devoid of housing. The Northern
erkshire region has always been ~~xxxx~~ perceived as a
ilderness "destination and this theme should act as a
uiding principal in developing this valuable piece of
roperty. There will always be a yearning and will

inherent in all of us to seek out a "special" place which satisfies both our need for adventure and solitude. The property on the eastern base of Mt Greylock can fill this niche and bring people to the area without compromising the lands' integrity and the quality of life which we now enjoy.

I am a life-long resident of Adams' and under the employ of the Department of Environmental Mgmt. I love Adams' and its' residence and have given immensely of myself in hopes of making a positive difference in my community. I have been a "long-time" student studying this project. I have continued to keep an open mind regarding this process. However, I reach the same conclusion; do not build any houses on the site. It is wrong both philosophically and environmentally. Home building in Adams' is best left up to private concerns and not under the guise of the State.

The Commonwealth of MA (D.E.M.) should "take back" the property and refine this project. The Greylock parcel holds immense possibilities. The State should bring to this parcel a showcase family orientated project which will help "excite" the economy of the area. Size is not important, but quality is!

If the State does not wish to develop its' property I believe that it should be incumbent upon our lawmakers to craft legislation that would instruct a fair and equitable tax structure fee be paid on this 1,063 acre parcel. This must be done because of its' targeted use as an economic "tool" to spur the economy. This fact

makes this property much different then the State lands which are taxed in a lesser manner.

Another possibility, which I do not encourage, would be to surrender the property back to the Town of Ad-n. This would allow the Town's leaders the opportunity to float a bond/or invest our money into building a resort project. All of the Towns' "fathers" ("mothers") seem to feel that this project is going to be a real winner." Who better then our residences to reap the expected economic windfall for this development scenario.

With much respect,
Joseph J. Nowak
78 East Hoosac St.
Adams, MA 01220

A few after thoughts:

1) The use of snowmaking for X-country skiing will be an ongoing/expensive undertaking. The snow that falls at/o the Greylock Center/State parcel is usually accompanied with gusty winds and snow is swept off the property muc like sweeping your floors. Also the hydrology of the area creates snow to be "melted" quickly when sub-surface waters "eat away" at the snow pack. The area is also open and subject to quick snow loss d to sun exposure. A now defunct resort (Swift River) n Cummington was a beautifully built complex with snow aking capacity and lodging/restaurant ammenities. A lot f money was put into this project: Just a comparison.

2) I am not in favor of giving Nature's Classroom an early OK to build on the parcel. I fear that that will give an unwarranted opening to try to "jump start" the whole project

Nick and Leslie Noyes
60 West Mountain Road
Adams, MA 01220
413-743-4140

T6

October 3, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit,
100 Cambridge Street
Boston, MA 02202
Re: EOEA No. 11083

39

Dear Mr. Durand:

We write regarding the Notice of Project Change submitted by DEM for the Greylock Center Project.

First, as abutters to the project we wish to protest in the strongest terms the heavy-handed and deceptive tactics of the Proponents of this project. After years of discussion and negotiations with our group, consisting of neighbors to this project, the Proponents have emerged at the eleventh hour with a plan that *could not be worse for us from virtually any point of view*. Up until now we were led to believe that our road might be dead ended, that the project's primary access road would possibly be the connector road from Gould Road, and that the development would feature clustered housing and other structures at a suitable distance from our homes. Now, at the last minute we have houses directly across the road from our own, houses running up and down the street (effectively negating most of the value of the connector road, because access to the project from West Mountain Road cannot be restricted), and an entire development project that has slid down the road into our back yards and our front yards. Not a single thing is where it was in the plan Proponents put forth for environmental review and approval. We are confronted with an entirely new plan and only days to read it, understand it, and respond.

Beyond that, the NPC does not adequately address the requirements of 301 CMR 11.00: MEPA REGULATIONS. Note that Section 11.10: Project Changes and Lapses of Time (1) Notice of Project Change for Project Change. states: *The Notice of Project Change shall specify in detail any change in the information provided in any previous review document.*

The Notice of Project Change not only does not specify these changes, it does not even mention them. The only way we, as abutters, became aware of the changes noted above was to discover them on the map of the new project enclosed with the NPC. This distribution of housing along the existing roadway represents a significant departure from the clustered housing model that has always characterized plans for development of Greylock Glen. This change alone warrants more study than simply filing an NPC before the final EIR.

39.1

Addressing all of the inadequacies of the NPC is virtually impossible, but several important facts stand out:

1. The NPC purports to address issues raised by comment letters to the draft EIR. In fact the NPC ignores and refuses to answer questions about many of the key issues raised by the letters. As the author of two letters pertaining to the draft EIR, I can point to those letters in particular as examples of how the Proponents offered no specific responses to a host of concerns that we raised. Perhaps if they had read my letter addressing their original draft EIR request for an early action waiver, they would have followed the legal requirements as they applied for yet another waiver in conjunction with this NPC.

39.2 2. Despite repeated requests from an array of concerned parties, including the previous Secretary, Trudy Coxe, Proponents continue to *refuse* to conduct a financial analysis of this project. As this project is purportedly an economic development package, this analysis has now become essential, if only because the town of Adams has, with this latest scheme, assumed responsibility for supplying the project with water and sewer services and even money (in the form of tax concessions), without performing any concrete analysis of the economic ramifications. Why is the developer being allowed to proceed at all, when he admits that he does not have sufficient funding to see the project to fruition–and will need a taxpayer bailout to complete it? This alone is madness.

3. Desperate to show something for years of effort, town officials now appear willing to make any concessions necessary, regardless of the consequences, to get shovels in the ground for this project. This attitude, long felt but rarely expressed, came to the surface in Adams Selectmen Chairman Edward MacDonald's "defense" of the NPC plan as reported in the *Berkshire Eagle* (Saturday September 25, 1999) following the public meeting on the NPC:

> "Also speaking in favor of the Greylock Center, MacDonald echoed his fellow selectman's sentiments. 'This is all we have. Something is better than nothing,' he said of the project."

Whatever noble and lofty environmental goals and mandates the original Greylock Center development plan originally contained have, with the NPC, been whittled away and watered down and qualified to the point of meaninglessness. What we have now is a vague plan for a run-of-the-mill housing subdivision, and a golf course that will have to be blasted out of one of the most scenic areas in the state, if not the nation. This "something" is far, far worse than "nothing."

Development of this unique parcel calls for a concrete, doable plan, not a half-baked amalgamation of concessions and cost-cutting measures that Proponents hope will turn out OK in the end. Whatever happens at Greylock Glen is forever. Decades have been spent on the process, and while it is tough to go back to square one and rethink this project, the time has come to do so.

Sincerely,

Nick Nogues

Lisa Nogues

PS: The attached Berkshire Eagle editorial is an excellent synopsis of many of the problems with this latest plan.

The Berkshire Eagle

Published daily since May 9, 1892, with weekly newspaper roots
starting with The Western Star published in Stockbridge beginning December 1, 1789.
75 South Church St., Pittsfield, MA 01202; Circulation (413) 496-6355 All other departments (413) 447-7311
Outside local calling area: 1-800-245-0254

Martin C. Langeveld, *Publisher* **Andrew H. Mick,** *President & Chief Executive Officer*
David Scribner, *Editor* **Bill Everhart,** *Editorial Page Editor*
Victor W. Bilak, *Vice President & Chief Financial Officer*
Mark A. French, *Advertising Director* **Michael D. Fern,** *Circulation Director*

Editorials

Glen plan is more unworkable than ever

The Greylock Center project has undergone yet another metamorphosis. On Thursday, project officials discussed and defended a whole host of changes, both major and minor, made to the project over the last year before an audience of Adams residents. The officials are to be commended for the openness with which they have proceeded.

However, over the years, the many and sundry revisions made to the plans for Greylock Glen have degraded what was already suspect from the outset to even more shaky territory. The project has strayed so far from the original idea, an environmentally friendly resort and education center, that only the most keen-sighted of observers can still make out its outline in this latest plan.

For example, the proposal to include a golf course in the Glen, which virtually no one was clamoring for, was misguided at best. The destruction of habitat and the ongoing disturbance of routine fairway maintenance was always out of step with the guiding premise.

In this latest permutation, Greylock Management Associates has abandoned any semblance of environmentally sound practices in relation to the proposed golf course. The planners found that they had to relocate nine holes of the course to a rocky area that will require blasting, an obvious abandonment of the resort's governing principals. Greylock partner Christopher Fleming's unfortunate and vague comparison of the amount of blasting required, "Not a lot. . . . Certainly not to the scale that Specialty Minerals next door," is indicative of the changed direction of the project — it is now comparable to a manufacturing operation that has been digging into the mountain's slope for decades.

Also included in the latest change of direction is a plan for Adams to supply the water for the course's irrigation from its municipal sources. The planners tried to gloss over this critical change, and its possible affect on water supply, with the sop that the town would benefit from increased water revenues. They also noted stream flow from the site, a serious environmental consequence, could have been reduced if the irrigation had come from the now-abandoned ground water sources. Adams residents should be wary of the carrot-and-stick approach.

Lastly, the revised plan includes moving some home sites to existing streets. Residents are justifiably alarmed that Greylock Center has become just another housing project, one that is being underwritten by state funds and the gift of 1,100 prime acres. This last change comes as a belated recognition that the overall financial model for the resort is unworkable, based as it was on the construction and sale of 300 homes within the development. No one has ever shown that a market exists for these fantasy homes, and now the developers are seeking to locate homes on existing streets to cut their own costs. The relocation of the home sites to residential streets clearly should be prohibited.

Adams can't be faulted for wanted to use the Greylock Glen to generate some tourist revenue, but current plans will destroy what Adams has to sell in the Glen — its natural beauty. Cross country skiing and hiking and biking trails through the Glen could generate some revenue. If Adams and GMA, however, insist on going for the big bucks, the Berkshires could lose one of the areas that make the region distinctive.

In Brief

Making emissions test work

On Friday, the state's new, state-of-the-art auto inspection system, dubbed the Enhanced Emissions and Safety Test, will replace an out-

than before and there has been little time for them to get set up. Paying a bit more for a two-year inspection sticker that will reduce noxious emissions is beneficial, but only if drivers aren't hugely inconvenienced.



Lett

Aborti

To the Editor of T

This is a r
21 Eagle le
and the crit
comments
"Legalized
written by
University
and John
University
fessor.

The stud
that legali
explain as
overall cri
nation expe
1997. The t
that high ra
teen-agers,
poor elimi
would have
who had th
have engag
ior.

According
"provides a
mothers of
going to lea
avoid bring
world." The
saying it is
babies if in
the baby mi

It should
study did n
effect rel
increased

Nick and Leslie Noyes
60 West Mountain Road
Adams, MA 01220
413-743-4140

DF
RECEIVED
OCT 07 1999
MEPA

October 3, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit,
100 Cambridge Street
Boston, MA 02202
Re: EOEA No. 11083–Early Action Waiver

Dear Mr. Durand:

I write regarding the Request for Early Action waiver sought by the DEM for the Greylock Center Project. It is disturbing, yet telling, the DEM once again ignored the rules for applying for such a waiver. I quoted the relevant portions of 301 CMR 11.00 MEPA Regulations in my letter (#61) regarding their previous incomplete and inadequate waiver request, reprinted in the Notice of Project Change that contains the new waiver request.

Pursuant to 301 CMR 11.00 MEPA Regulations:

Section 11.11(1) Standards for All Waivers: (a): Secretary *must find that strict compliance with the provision or the requirement would result in an undue hardship for the Proponent, unless based on delay in compliance by the Proponent.*

The Proponent fails to address in any way the basic standard requirement for granting of a waiver: that *strict compliance with provisions or requirement would result in undue hardship for the Proponent.* **No such hardship is mentioned, demonstrated, or in fact exists. Proponents have failed to establish any basis for granting this waiver.**

Section 11.11(1) Standards for All Waivers: (b): Secretary *must find that strict compliance with the provision or the requirement would not serve to avoid or minimize Damage to the Environment.*

The building of the Greylock Lodge, the lynchpin of the project, will require extensive clearing, and a half mile of excavation, some along Peck's Brook, to install water and sewer lines. Further, establishing the permanent location of the Lodge before the other components of the project have approval will lock in a host of design features before essential questions — for example, traffic flow, the proposed connector road, and other access — have been addressed by the EIR. The comments on these issues in the Notice of Project Change are weak and inadequate.

Section 11.11(3) (b): The Secretary shall at a minimum base the finding required in accordance with CMR 11.11(b) on a determination that ample and unconstrained infrastructure facilities and services exist to support the project.

No water or sewer infrastructure exists anywhere near the proposed Greylock Lodge, and would have to be constructed. Further, West Mountain Road is unsuitable in design for use as the main access for the Lodge, It is unpaved (it is chip sealed) steep and winding, and not engineered for heavy traffic. In winter, it is often only accessible in a 4-wheel drive vehicle. With a 15% grade, this road is unsuitable for transporting busloads of schoolchildren to the Lodge and likely does not conform to the traffic engineering requirements of such a project. At the very least, further traffic study is required before *any* building commences.

As the proponent has again failed to meet even the basic standards for requesting and justifying a waiver per 301CMR 11.00 we trust that the Secretary will, for good cause, reject the Proponent's vague, halfhearted, and unsubstantiated request.

Sincerely,

Nick Noyes

Linda A. Noyes

NORTHERN BERKSHIRE CHAMBER OF COMMERCE

NBCC

57 MAIN STREET, NORTH ADAMS, MA 01247

OF

Creating Northern Berkshire's Future—Together!

RECEIVED
OCT 12 1999
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge Street
Boston, MA 02202

Subject: Greylock Center, Adams, MA
EOEA No. 11083
Notice of Project Change
October 8, 1999

Dear Secretary Durand,

I am writing to reaffirm my support of the proposed Greylock Center project. The development team continues to prove that not only can this project succeed, but that it can succeed with a combination of efforts to fulfill their promise to keep the project environmentally sound and sustainable.

The four issues in this report: Identification of a preferred alternative; Formal confirmation of the extent of wetlands and riverfront area on the site; Results of groundwater exploration; and the Request for an Early Action waiver for Greylock Lodge, have certainly been researched and addressed thoroughly by the developer.

A recent report for the Mount Greylock Scenic Byway project conducted for the Berkshire Regional Planning Commission by MarketReach Incorporated specifically addresses some issues in the Town of Adams, namely that Adams has an almost total lack of lodging facilities. The following excerpt from the report identifies these Adams issues

- Not counting Bascom Lodge which is technically in Adams but is atop Mt. Greylock (and is not really accessible from the city of Adams), Adams has only two lodging facilities, with 34 rooms and capacity of approximately 156 persons.
- These substantially underserve the existing market. One of these two facilities is a lower end motel of a type that tourists may pass by.
- Adams is undoubtedly missing out on a substantial lodging business of travelers who would stay in Adams if they could, but no acceptable facilities are available[1]

[1] Mount Greyloack Scenic Byway Study, August 1999, MarketReach Inc., 529 Martindale Road, Shelburne, VT 05482, page 22

This project would help create the lodging facilities that Adams needs to compete with the rest of the Northern Berkshire area for tourism dollars, and would undoubtedly create opportunities for the businesses in the area, especially those located in the central downtown areas of Park and Summer Streets.

The changes in the golf course design also prove the willingness of the developers to listen to the needs and desires of the community by adjusting the project to enable the community to continue to enjoy the "Glen" area as they have in the past without the worries associated with a golf course near by.

In conclusion, I once again urge you to support this environmentally sound, and sustainable undertaking. The project will promote economic development, enhance the region, serve to fill a lodging void identified in Adams, and set the highest standards of design to protect natural resources.

Very Truly Yours,

Michael Supranowicz, Executive Director
Northern Berkshire Chamber of Commerce
57 Main Street
North Adams, MA 01247

3 Melrose Street
Adams, MA 01220

OF

October 6, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

RECEIVED
OCT 12 1999
MEPA

Subject: Greylock Center, Adams MA
EOEA No. 11083
Notice of Project Change

Dear Mr. Durand:

The feeling at the pit of my stomach as I write this is not pleasant. I am so very disappointed in the so-called "Preferred Alternative." After three years of struggle to establish an environmental awareness and sensitivity to our beautiful Mt. Greylock, the DEM and GMA have come up with a greatly changed plan that has nothing at all to do with environmental impact and everything to do with money in a few pockets.

The "village" is now sprawled all over the place. Not one single commentor has suggested that! I was heartsick listening to residents of West Mountain Road claim that GMA has assured them that "if you work with us, we'll work with you" on that
41.1 residential area -- until GMA no longer returned their calls. What kind of good faith is this when the West Mountain Road residents now find themselves in such a distressing situation? GMA's public response to one troubled resident was to paint themselves (GMA) as the victim in all of this!

The new "returning nines" design of the golf course (How convenient for those elite who can afford to play there!)
41.2 appears to ignore environmental concerns and foster the ALMIGHTY DOLLAR. The back nine is in an area in which thousands of trees will have to be cut down and ledge blasted. There were no suggestions in the comment letters about this either!

In fact, the major issues and concerns of the commentors were not only ignored, but fly in the face of everything the commentors hold dear.

The "Public Park" is becoming increasingly non-accessible, and access will be severely limited during golf season -- when most of the Berkshire residents who frequent the Glen enjoy this area.

I can picture a group of Greylock Center "vested" interests sitting around a table and asking, "What can we come up with that is to this project like baseball and apple pie are to the good

ol' USA?" The answer -- a Parks College! This concept sounds impressive, but it would be duplicating much of what is offered in nearby colleges. Mr. Webber did not even want to comment on it because "it" does not exist, except in name only at this point -- and at this late date in the project planning!

The Early Action Waiver requested for the Greylock Lodge should not be granted. Two reasons for the waiver request, which run the gamut, have been given. First, Nature's Classroom is in the "hospitality business" and needs the lodge, not for educational purposes, but to begin making money "lost" so far -- and second, it would provide stewardship for the Glen. How will this happen? A waiver should not be given for all the wrong reasons.

I thought I would feel better getting this down on paper, but I don't. The bottom line is that GMA needs housing and housing needs a golf course -- so much for the environment and sustainability.

Sincerely,

Nancy A. O'Brien

cc: Governor Paul Cellucci
Lieutenant Governor Jane Swift
State Representative Daniel Bosley

Mason Phelps
PO Box 122
Wendell MA 01379
Telephone: (978) 544-2735

RECEIVED
OCT 08 1999
MEPA

DF

42

October 6, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attention: MEPA Office
[Richard Foster], EOEA No. 11083
100 Cambridge Street - 20th Floor
Boston MA 02202

RE: EOEA #11083 - Notice of Project Change to the DEIR for Greylock Center in Adams

Dear Secretary Durand,

I am writing you to comment on the Notice of Project Change for the proposed Greylock Center. I was somewhat dismayed by the statement in the Greylock Center newsletter and the cover letter from Commissioner Webber that the comment period had been extended to 30 days from the customary 20 days, since my copy did not arrive until September 18. This left me exactly 20 days for comment. Just being noticed in the Monitor is not enough. The document should be available as well.

By the way, I believe that in order to have a meaningful comment period, the receipt time should be extended to include all correspondence postmarked no later than the day on which the comment period ends. This would mean that the full comment period could be used to prepare comments and would not need to be shortened by several days in order to accomodate postal processing.

The IRS and the MA DOR permit this for income tax filings. It would be nice if MEPA could do the same. I am not suggesting that MEPA should wait until all possible mail has been received, but that comments postmarked by the due date should be considered to be timely.

GENERAL DISCUSSION

I am pleased that the buildings (houses, village and Greylock Lodge) are to be clustered closer together. However I am still disturbed by the housing part of the Greylock Center project. The presence of housing neither improves the protection of Mount Greylock nor increases educational and recreational opportunities.

42.1 I can remember attending a planning meeting in Adams several years ago at which I was chided for laughing out loud at a statement that housing for 300 families would be allowed as a maximum, but that many fewer would probably result. I don't see any evidence that fewer houses are even being considered and in fact the number 300 is now perceived to be immutable.

42.2 The project is frequently referred to as being sustainable, but there is very little evidence to this effect. The use of outside water and sewage disposal is an indication of this fact. A sustainable use of this area would be one which uses water (for example) from the site and disposes of its wastewater (for example) on the site without hurting the environment. This has already been shown to be impossible on this site with this level of development. Clearly Greylock Center would be much more sustainable without the 300 houses.

Greylock Center has the opportunity to be a shining example of environmental sensitivity and energy conservation. Unfortunately it seems very much like an ordinary development which abides by the regulations, but does not actively try to do better than allowed by the regulations. It should be realized that environmental regulations and best management practices are only a compromise between protecting the environment and permitting its degradation in order to allow development. They are not the best that can be done.

Parking locations are not specifically shown. How much parking is provided and where is it?

SPECIFIC COMMENTS

Table 1-1

As mentioned in the general comments above, it is a distinct improvement to have most of the buildings clustered together.

The removal of the equestrian facility is also an improvement.

It is good that the number of trail crossings has been decreased, although this was probably motivated by the 5,000 square foot wetlands threshold.

Why was the South Knoll Park proposed? And what exactly is being proposed? In the present plan this location is one of the few relatively flat, dry areas which has not

42.3 been otherwise developed. I guess that just as nature abhors a vacuum, development abhors open space. What is the access to the park? The colored map shows a spiral roadway(?) with six small circles on it. What do these represent? Is there associated parking?

With regard to the development as a whole where will the parking for the various facilities be located? How much will there be?

1.3.1 Water Supply

Why were the test wells (especially well "H") drilled when the cost/benefit analysis was going to eliminate them anyway?

1.5.1.1 - Phase 1 Components - Public Components - Recreation

Why was Corcoran Jennison Hospitality mentioned parenthetically? Would not such a contractor be subject to bid processes?

1.5.2 Waiver Request for Environmental Education Center

I don't think there is enough information to grant this request yet. The sustainable attributes are only discussed hypothetically and there is no clear indication which, if any, will be employed.

The use of geothermal energy should be studied carefully. Presumably the water used will be returned to the ground colder in winter and warmer in summer. Will this have any adverse environmental effects?

The document would be easier to read if there were only one name for this facility.

1.6 - Fiscal Analysis of Phase I

This fiscal analysis should have been part of the DEIR and so should have been attached as an appendix to the Change Notice. It certainly is not available in a timely manner for the present comments.

2.0 - Wetland Resources

The Table shown in Appendix E is purported to solve all the difficulties commenters had with regard to locating specific wetlands on the plan accompanying the DEIR. The Table is fine, but once again the wetlands are not located on the plan. The identifying letters A, B, C, ... would be ideal if printed on the plan to identify the wetlands.

Old Foundations

I was pleased to note that the plan no longer calls for the removal of the concrete foundations located in the wetlands because of the wetland impacts associated with removal. In addition, these foundations are not without historical interest, which will no doubt increase with time.

Wetland Crossings Table 2-1

The wetland crossings described in Table 2-1 are identified well on the plan just as the wetlands could have been.

42.4 Crossings 4a, 4b and 4c appear to be unnecessary. If more trail is desired it could be put in the upland area located in the northeast corner of the property outside of the

riverfront area. Were these crossings included because there was no perceived problem, or because the 5,000 square feet of allowable wetland alteration had not been used up?

42.5 I note also that several pieces of trail corridor in this area cross the Specialty Minerals property. Is this with the owner's permission?

42.6 Wetland crossing 5a appears to cross a substantial amount of wetland. Rather than filling, would it not be better to use a bridge supported off the ground by piles as is presumably being done at some other crossings?

42.7 Crossing 16a is not shown on the plan as a wetland. Is this one of the wetlands which has not yet been mapped?

42.8 I note that a crossing 11a is shown on the plan but is not in the table, while crossing 11 is shown in the table but not on the plan. Are 11 and 11a the same crossing?

Trails in the Riverfront Area

42.9 The text refers in several places to the desirability of trails closely following streams for esthetic and educational reasons. I believe the riverfront area is protected for even more compelling reasons, and that trails should stay out of the riverfront area as much as possible and in particular that they should not be located within the inner 100 feet of the riverfront area. If some particular part of a stream must be viewed more closely a side trail could visit this part of the stream and then return to the main trail. One might think that the 47 (or perhaps 44?) wetland crossings might satisfy the need for wetland viewing.

Tent Camping

42.10 It is noted that some of the tent camping is located within the riverfront area. Could this campsite be moved into the upland near the northeast corner of the site in order to avoid use of the riverfront area?

Miscellaneous Comments on the colored plan (Figure 1.1?)

I note on the plan that the rustic cabins do not appear to be served by a roadway. Should they be relocated? I don't think the rustic cabins should have parking (or even access) to private vehicles, but perhaps a Greylock Center vehicle could bring in and take out luggage once a day.

42.11 In the southeastern part of the plan there appear to be a number of small rectangular exclusions. What are they?

42.12 On the plan the most westerly branch of Peck's Brook appears to have a black line running down the middle of it. What is this? Between this branch of Peck's Brook and the Gould Farm is another permanent stream which is tributary to the first syream. A pair of faint black irregular lines parallels this stream, one on each side. What do they indicate?

3.2.2 Water Quality

42.13 Is it wise to count on the Adams water supply never being being treated with Chlorine? Unforeseen health requirements could easily change this.

Thank you very much for the opportunity to comment on the Greylock Center which will be visited by people from all over the world.

Sincerely,

90 Copies Received

Dear Secretary Duran,

I/we are strongly in favor of the participation of Nature's Classroom, in the Greylock Glen project and advocate for the early development of the Environmental Education Facility as requested in the DEIR. Nature's Classroom is a quality program which will bring immediate positive academic and economic impact to the project. I/we request you grant a waiver for this Early Action.

Sincerely, Jane Coleman

Address: 205 Cottage ST City: Housatonic Zip: Ma 01236

OF

RECEIVED
OCT 12
MEPA

Mr. Robert Durand, Secretary
Executive Office of Environmental Affairs,
Attn.: MEPA Unit
100 Cambridge Street
Boston, MA 02202

44

October 8th, 1999

Dear Secretary Durand:

I understand that you are looking for comments from the public about the proposal for Greylock Center in Adams, MA (EOEA # 11083). I have not yet seen the Proposal of Project Change book - I ordered it recently - but I did attend the public meeting in Adams on September 23rd. I hope this letter gets to you in time for your consideration.

My grandparents emigrated here to Adams at the turn of the century from Lebanon. They owned several businesses and properties in town and made a good life for themselves. I moved to Adams myself in March of this year, into the house my grandparents built in 1924 on Country Club Avenue, just a few blocks down from the foot of Mount Greylock and Greylock Glen. This is the house my mother grew up in, back when there were only farms behind us. My uncle lived here until he died in 1992.

I like Adams and the history represented here for my family. I want to see the economy of this town grow and stabilize. After the economic depression of the years since the mills closed, the people of Adams need to feel some hope and excitement about the future. The Greylock Center project has been put forward as the only way to 'save' Adams. Though I am not sure that Adams needs 'saving', the Greylock Glen projects have, over the decades, in their many forms, offered some hope, but each project has failed, each for its own reason. It is no wonder that people say the current plan is better than nothing, even if they don't like it much. As a new-comer to the town, I feel very sad that this development might go through. The Glen is a very special area and could be developed in so many ways that would preserve its beauty while enhancing the economy of Adams. I would love to see the area improved as a recreation and environmental education park with a center serving as a lodge and public information and education center. Already existing trails for hiking, biking, and skiing, maintained in connection with the trails up the mountain, could be improved and camping and perhaps a few rustic cabins added.

However, the housing development and golf course proposed just don't fit in this location nor on the land available. There is no need for a golf course and all its associated environmental problems. They have already had to completely rearrange the golf course because of the wetlands. I do not believe a golf course can be built in a way that would retain the integrity and beauty of the Theil Farm area, where the current plan intends to build several fairways. Cutting down hundreds of trees and blasting away ridges just isn't gentle or low impact. And I know that building houses up and down West Mountain Road, spread on both sides, and ending in a housing cluster, will devastate the environment and the peace of the area. Do they

44.1

really plan to build houses without basements, garages, or driveways? I've heard rumors of this and though it does sound environmentally friendly, I find it hard to believe. Do you really think wealthy people would buy such houses? And imagine what this housing development and golf course, nestled up against the foot of the mountain, will look like to the people looking down on Adams from the top of Mount Greylock. Mount Greylock is a beautiful mountain, the tallest in the State, and is important to the people of Massachusetts.

The State was wise enough to buy up the land at the eastern foot in 1985. Surely Massachusetts can now come up with a plan to preserve and improve this area, keeping it open to all the people of Massachusetts, not just to those who can afford the new houses or the fees at a championship golf course. I understand there is six and a half million dollars available towards the plan. In view of this, I don't think commercial interests should dictate the nature of the plan. The way to develop the economy of Adams is to build a vibrant downtown, with B & B's, little hotels, and restaurants as an infrastructure to support a wonderful natural recreation and education area at the foot majestic Mount Greylock, with trail connections to the Appalachian and the Aschuwilltocook trails.

Please think carefully about your role as Secretary of Massachusetts in approving of this plan. The Glen is Commonwealth of Massachusetts land, and the people of Massachusetts, all of them, deserve a protected and vibrant State monument.

Thank you for your consideration. I hope to hear from you soon.

Sincerely,

Caroline Scully

Caroline Scully
7 Country Club Ave
PO Box 341
Adams, MA 01220

(413) 743-0229
carolinescully@compuserve.com

cc. Governor Argeo Paul Celluci

DF

COMMONWEALTH OF MASSACHUSETTS

MASSACHUSETTS SENATE

STATE HOUSE, BOSTON 02133 1053

SENATOR ANDREA F. NUCIFORO, JR.
BERKSHIRE, HAMPDEN, HAMPSHIRE
AND FRANKLIN DISTRICT
ROOM 213B, STATE HOUSE
TEL. 617-722-1625
FAX 617-722-1523

DISTRICT OFFICE:
74 NORTH STREET
PITTSFIELD, MA 01201
TEL. 413-442-6810
FAX 413-442-6927

RECEIVED
OCT 08 1999
MEPA

COMMITTEES:
BANKS AND BANKING (CHAIRMAN)
SENATE WAYS AND MEANS
HUMAN SERVICES
AND ELDERLY AFFAIRS
LOCAL AFFAIRS

October 8, 1999

45

Robert Durand, Secretary
Executive Office of Environmental Affairs
Attn: MEPA Unit
100 Cambridge Street
Boston, MA 02202

VIA FAX (617) 626-1181

Re: Greylock Center, Adams MA - Notice of Project Change - EOEA No. 11083

Dear Secretary Durand:

I write to convey my continuing support for the economic development project, known as the Greylock Center, in the Town of Adams. More specifically, I want to indicate my favorable opinion of the "request for an early action waiver" for the environmental education center and the necessary supporting infrastructure for the environmental education center contained in the recent Notice of Project Change submitted by Commissioner Peter C. Webber.

The environmental education center is a key component of the economic development package for Adams. Local officials in Adams have impressed me with the long-term importance of this center, which will attract additional environmentally-friendly business and educational activities to the Town. They also note that early action to permit the construction of the center will generate activity and provide a presence on the site which will discourage dumping and illicit activities which are currently hard to police at this isolated location.

I hope you will give strong consideration to the request of the project proponents for the early action waiver for the environmental education center. Please feel free to contact me if I may provide additional information in support of this matter.

Sincerely,

Andrea F. Nuciforo, Jr.
State Senator

OF

62 Maple Street
Adams, MA 01220

46

October 6, 1999

Robert Durand, Secretary
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

RECEIVED
OCT 12
MEPA

Subject: Greylock Center, Adams, MA
EOEA No. 11083
Notice of Project Change

Dear Mr. Durand:

We are a couple in our 80's who have lived at the foot of our beloved Mt. Greylock all our lives. It hurts us deeply to realize that we have once again been duped by the "powers that be" concerning the Greylock Glen Housing Project, as we prefer to call it.

A while ago, a modified site plan appeared through the efforts, we believe, of the CET. It was, for us, the least of all evils, and we were heartened by its existence.

1 Now, lo and behold, comes the Preferred (by whom?) Alternative! We have a village sprawl and a returning nines golf course which, supposedly, are answers to commentor concerns. We have reviewed the comment letters and can find nowhere, requests to design and build so that GMA can profit -- which is just what is intended with these changes.

We object also to the Early Action Waiver request on the grounds that environmental concerns are no longer being addressed, and also that a new EIR should be instituted to look into these radical changes.

A system of recreational/educational components on this precious land would be the ideal project for its use. It can be done! It should be done!

Sincerely,

Frank Shaw

Helen Shaw

Frank and Helen Shaw

cc: Governor Paul Cellucci
Lieutenant Governor Jane Swift
State Representative Daniel Bosley

VF

MASSACHUSETTS SIERRA CLUB

100 Boylston Street Boston MA 02116 (617) 423-5775 fax (617) 423-5858

October 6, 1999

47

Secretary Robert Durand
Attn: MEPA Office
Executive Office of Environmental Affairs
100 Cambridge Street, 20th floor
Boston, MA 02202

RECEIVED
OCT 12 1999
MEPA

EOEA 11083, Greylock Center Notice of Project Change

Dear Secretary Durand:

On behalf of the Massachusetts Sierra Club, a non-profit environmental organization with 19,000 members in Massachusetts and more than 500,000 members nationwide, we submit the following comments for your review on the Notice of Project Change for the Greylock Center, EOEA project # 11083.

The Greylock Center project has had to be changed from the plan described a year ago in the Draft Environmental Impact Report because of the discovery of more extensive wetlands than were originally mapped, and the inclusion of buffers for streams as required by the Rivers Act. Expert golf course designers have found a way -- just barely -- to fit 18 holes of golf on the site without exceeding the limit of 5,000 square feet of wetlands disturbance. Avoiding wetlands impacts is good. Unfortunately, the new golf course configuration requires blasting and significantly increased cutting of trees.

47.1

Removing the hotel/conference center from the southern knoll is good, because it saves a very scenic site and it reduces the length of roads, water and sewer pipes, etc. The Sierra Club called for including the hotel in the village, are glad to see that that change has been made. The revised plan in general attempts to consolidate the buildings more than the original plan which is good. But it includes houses along the West Mountain Road, thereby making the development look like a standard subdivision, which it is not supposed to be.

47.2

The "Glen" area which was the supposed "park" to be left for those uses currently being enjoyed on the site by residents of the area, is mostly wetlands and surrounded by golf holes.

47.3

The "Rustic cabins" and a tent camping area were sited without any thought to the customers for such facilities and their need for parking near the facilities. No one wants to lug all their camping gear or food and cooking equipment uphill on trails past golf holes to "rustic" cabins. Backpackers won't camp next to a golf course or resort, and families seeking the comfort and convenience of "car camping" or cabins won't carry their equipment so far.

47.4

The "public recreation" promised for this project since its inception has now practically vanished; all that is left are golf, cross-country skiing past the golf holes in the winter if the weather cooperates, and, if you can find them, trailheads for trails to the Mt. Greylock State Reservation which already exist and are much easier to find and more pleasant to access now then they will be if this project is built.

The Greylock Center project has touted itself as providing environmental education. The process itself has become the education. It is now clear that the program is too large for the site, if all environmental laws and constraints are observed. We have learned that 1,000 acres isn't very much space, particularly when much of the land is unbuildable. The project must be scaled back if it is to go forward at all as an example of "sustainability."

The Sierra Club has always been skeptical of the claims of this project to be an example of "sustainable development," a term which has never been clearly defined. While it is true, and commendable, that the developer and the Department of Environmental Management have conducted many studies into possible "green technologies," such as alternative energy sources, "Energy Star" appliances and standards for insulation, and more benign than usual golf course turf and maintenance, it is also clear that many ideas don't work out. For example, the proponents have decided that the costs, engineering difficulties, and potential environmental degradation that would be incurred if the project used on-site ground water for irrigation of the golf course and snow making are greater than if the project uses Town water (particularly since infrastructure is already in place under the existing roads). Given the findings, it is understandable to us that they have chosen to use Town water; but we don't concur that this is an example of "sustainability." It's what any developer in similar circumstances would do.

Given the difficulties we have all observed in designing the project, and the apparent difficulties in obtaining private financing to contribute to this "public-private partnership," only one part of the proposal is ready to start right away: the environmental education component, apparently guided by Nature's Classroom, in the Greylock Lodge. We say "apparently" because there remains a lack of clarity about the roles of the Berkshire Institute and Nature's Classroom. In any event, the Notice of Project Change requests an "early action waiver" for construction of the Greylock Lodge, advancing the arguments that with its new location right off West Mountain Road and the existing infrastructure, the environmental impacts of that construction would be minimal, and the Lodge is severable from the rest of the project. The Sierra Club generally opposes segmenting projects, and does so here as well. Considerable environmental education is proceeding on the site as it exists now; more could be done. It is not necessary to have a residential facility including 40 rooms for guests for the education to continue or increase.

This project is not supposed to be just another conference center and golf course with nearby condominiums. From the Sierra Club's point of view, the insistence on including privately-owned second homes in the development makes a mockery of the

claimed mission to demonstrate environmental sustainability. It is not necessary to sell units for them to be well-sited and constructed of the "greenest" technology. (We note it still has not been decided whether "green" means local products, most energy-efficient, recycling of previously-used materials, a combination of these, or something else.) Adding an environmental education center doesn't change the overall emphasis of the project, in terms of land use, dollars invested, or the perception that visitors will have. What is the mission for this project? What is the market for that mission? These questions remain unanswered, except in vague half-defined references to "sustainability." Sustainability of what? What is the mechanism for requiring that the project in fact meet some generally-agreed upon definition of "sustainability" if it or any of its parts are permitted to proceed?

The Sierra Club remains concerned about the financial viability of this entire project. We believe the current proposal needs thorough financial review, by an objective and knowledgeable party, before further public resources are invested.

As we look toward the Final EIR, we wish to remind you of our continuing concerns about various project elements. In our comments on the Draft EIR, we pointed out that it did not actually analyze any alternatives. For example, the possibilities of expanding the recreational and environmental education programs currently taking place on the site, without the development proposed in this project, were not explored for their potential to meet the goals of Chapter 676; these should be examined. The Sierra Club consistently asked that an alternative without the housing component be studied. That request has been rejected. Yet it is now more clear than ever before that the proposed program is too big for the buildable area. Neither the Draft EIR nor this Notice of Project Change examines all the environmental impacts of a village of 250-300 housing units, commercial space, etc.

Years ago, in commenting on the Heritage proposal for this site, we had a complete site plan and could consider visual impacts from the summit and other places in the Mt. Greylock Reservation, views from off-site, on view sheds within the project, the effects of lights, air pollution from heating facilities (including wood stoves), etc. In this proposal, we have no information on any of these. It is clear that one of the most significant threats to rare and endangered species on this property will be disturbance by humans (and, potentially, their domestic animals). What are the plans to manage the human population (besides the golfers) attracted to this site by this project and even living on it, at least part time. Will outdoor pets be banned or at least be required to be restrained at all times? How will human residents of the Center, who may feel "entitled," as owners, to collect plants, etc., be managed? This information must be in the Final Environmental Impact Report for this project.

Sincerely,

James Bryan McCaffrey
Director

Pauline Sniezek
9 Grandview Ter.
Adams, MA 01220-1820

#5499
DF

Jo. MEPA Unit
Environmental
Affairs

October 1, 1999

RECEIVED
OCT 05 1999
MEPA

Dear Sirs -
or to whom it may concern —

Re: Greylock Glen Project
Adams, Ma.

It's high time we in Adams stand up for our rights. We certainly don't need outsiders telling us what to do. Our very competent Town Administrator, Jim Leitch, and our Board of Selectmen have worked diligently to accomplish the goal of getting a groundbreaking on the above-named project for many years. Please listen to <u>them</u> and not those who constantly run down our town.

We need to put Adams back on the Map.

I write this letter in whole-hearted support of the Greylock Glen Project.

Thank you —

Very Sincerely —

Pauline E. Snezek

&

Leonard F. Snezek



Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge St.
Boston, Ma. 02202

49

Subject: **Greylock Center, Adams, Ma.**
EOEA No. 11083

In response to the "Notice of Project Change" dated August 30, 1999.

It appears as though the developer has taken a giant step backwards in the design of the Greylock Center. The newly proposed plan looks at what could be built on the site in an attempt to make some money instead of looking at what is there now which holds a value so much greater than any money could buy. I believe we could enhance this precious land in a way that would be educational, environmentally sensitive and use its inherent value to sustain the overhead costs of a small scale project with a true concept not a total blunder as is now proposed.

In the foothills of Mt. Greylock lies historic features so unique that to develop it makes a mockery of Father Time! Priceless features such as an early Berkshire homestead type farm and an Olympic class downhill ski run from WWI era. The ski run site feature information is in the video which I've included. The early homestead which we call the "Thiel Farm" has many facets worthy of restoration for use in education and recreation. The remnants of the working farm breathe a sense of sustainability that the developer should learn from.

In the foothills of Mt. Greylock lies an environment so unique that to develop it makes a mockery of Mother Nature! It is a combination of field and wetland, forest and stream, deep rich soils, exposed rocky slopes and air. In the fields I have seen two migrations of mature whitetail deer. One in 1974 of about 17 deer, and the other last year with 14 healthy deer. In the wetlands I have seen a threesome of Blue Heron with a hue so blue you know they're true to name. In the forests I've watched a small bird that I call a falcon fly low to the ground at high speed in search of prey. In the tiny ribbonlike streams glitter the speckled sides of brook trout mature at a proud length of 6". In the deep rich soils grow every species of native plant material common to this area. In the exposed rocky slopes lies visual splendor similar to that of rainbows and spider webs. And in the air rings morning turkey gobbles, midday songbird chipper and evening owl wake up calls.

Please don't embarrass Mom and Dad by allowing the proposed plan to be built in the foothills of Mt. Greylock.

Sincerely,

John A. Trimarchi

RECEIVED
OCT 08 1999
MEPA

DF

October 1, 1999

Secretary Robert Durand
Executive Office of Environmental Affairs
MEPA Office
EOEA File No. 11083, Greylock Center
100 Cambridge Street, 20th floor
Boston, MA 02202

50

RE: The public-private development in Adams, Massachusetts known as the Greylock Center or the Greylock Glen.

Dear Secretary Durand:

I'm confused! In a letter to Trudy Coxe, Secretary of Environmental Affairs, dated September 8, 1998, James R. Mulkey Jr., Director of Manufacturing Operations at Specialty Minerals Inc., states: "SMI is concerned about the location of the proposed trails on the north and east end of the property. Based on our review of relevant maps, we believe that a portion of the proposed trails would encroach on property owned by SMI, and would bring trail users into close proximity with industrial operations. SMI cannot agree to the development of any trails across its property. Our attorney will be contacting the project sponsors separately to resolve any outstanding questions concerning this matter."

50.1 Yet in the Notice of Project Change on August of 1999 the Greylock Center Project map clearly shows hiking trails, golf holes, and a golf cart path still located on land owned by Specialty Minerals Inc. I don't get it:

- Why wasn't Specialty Minerals consulted and an agreement secured by DEM/GMA *before* using SM land in the 1998 Greylock Glen development? That's the legal, logical, prudent, and neighborly thing to do.
- Why, after receiving Mulkey's warning letter in 1998, did DEM/GMA ignore it, and again bring to the table a plan that continues to encroach on Specialty Minerals land? Even at this late date, October 1, 1999, DEM/GMA and Specialty Minerals still have no land agreement. Isn't that glaring impropriety an embarrassment for DEM/GMA, or worse, a showstopper for this entire project?
- If, as the developer Chris Fleming has suggested at a recent meeting, there is some possibility of a future land deal between DEM/GMA and Specialty Minerals, what does it involve, and why wasn't it revealed earlier? We know Specialty Minerals has what DEM/GMA desperately needs . . . land! But Specialty Minerals does not give up land easily. They need all they have for continuing operations. In fact their mode-of-operation has always been to buy all available land adjacent their boundaries as buffer zones for their ever-expanding quarry. DEM/GMA has no land to sell or trade. So where lies DEM/GMA's negotiation power? What is "the offer they can't refuse"

to Specialty Minerals? Or is all this just some gross miscalculation, a horrible mistake at public expense?

Surely, with no firm deal regarding Specialty Minerals land, our precious time shouldn't be wasted commenting on environmental issues in this latest Notice of Project Change, when this development obviously still encroaches on Specialty Mineral land and is threatened by illegal trespass.

One last thought, even if GMA is able to miraculously acquire this essential land there is still the issue of "bringing trail users into close proximity with industrial operations." That, of course, is unacceptable. Specialty Minerals is politly saying this is an active quarry area, dangerous and unsuitable for public trespass. KEEP OUT!

Thank you for your time,

John R. Trimarchi

John R. Trimarchi

240 Columbia Street
Adams, MA.
01220

Photo enclosed depicts Greylock Mountain and the southern end of Specialty Minerals quarry. Note plumes of airborn dust drifting over the area of the relocated golf holes.



PAMELA B. WEATHERBEE

Botanical Consultant
236 SWEETBROOK RD.
WILLIAMSTOWN, MA 01267
413-458-3538
Email: [redacted]
pamweath@bcn.net

October 5, 1999

51

DF

RECEIVED
OCT 07 1999
MEPA

Robert Durand, Secretary
Executive Office of Environmental Affairs
ATTN: MEPA Unit
100 Cambridge St.
Boston MA 02202

Re: EOEA #11083 Notice of Project Change

Dear Secretary Durand:

One could nit-pick these plans to death, and not address the greatest, fundamental flaw in the whole project. That is the addition of housing to the plan. After years of deliberation, the Advisory Committee chose a plan with a hotel, golf course, recreational facilities and camping. They ruled out housing. When the developers said they could not do it without housing, the committee jumped quickly to allow up to 300 units of housing. Many people, who otherwise support some plan for the Center, are against housing.

51.1

Detrimental Effects of Housing

Housing invites sprawl, creates intrusive traffic, more roads, and parking with all the pollution that brings, brings noise, and as planned completely ruins any scene of existing beauty, including outstanding views of Mt. Greylock., on West Mountain Road.

Housing takes away a great deal of public accessability, certainly takes away public enjoyment and always creates a private vs. public tension.

Single family houses do not pay their way tax-wise, have nothing to do with the goals of the project, and certainly do not conform to the DEIR Certificate issued September 16, 1998, which stressed need for real sustainability, not just add-ons, and also expressed interest in the "modified site plan" which was clustered development.

Why is State Funding being used for this type of housing?

Greylock Lodge, Environmental Education, Nature's Classroom

This is an important item for this property, because it lends itself to wonderful experiences for children, and adults. It should be the very best. Let's make sure there is enough open natural land remaining for the students to explore and enjoy.

Greylock Lodge appears to be also a Conference Center, and for "tourists". Will this be taxable property for Adams or tax exempt?

In the preliminary plans for the Lodge, I see no rooms that could be used for hands-on activities for students, like indoor labs, tables etc.

Camping and Rustic Cabins

51.2 These seem to be casually plopped onto the plan, with no explanation as to how anyone gets to them, or what they would consist of. They are not mentioned in either Phase I or Phase II. Who would build them, manage them? Greylock Center is an ideal place for camping, as an adjunct to the Campground on Mt. Greylock, but I see no real attention paid to this popular activity, which should be promoted by the State.

Golf Course

The Golf Course is, indeed, more compact, but now it seems to ring the land set aside for public enjoyment, the so-called "The Glen" even more tightly.

51.3 It also has moved North into the "Thiel Farm", land that was taken from the Reservation and added to this project by Chapter 676. This land was originally bought and donated by Adams citizens and others to be the finish of the Thunderbolt Trail, in the 1930s. It never can be permanently alienated. Now, in order to avoid wetlands, five fairways are being placed on rocky ridges and steep slopes. The rock ridges will have to be blasted, and a heavy tree cover will be removed. How can this land be so permanently altered when it could revert to the Reservation in 99 years? How will it fit in with the rest of the development when it cannot be sold. Shouldn't there be more care of this land?

Scenic Beauty as an Economic Asset

The economy of the Berkshires is more and more based on a tourist and summer visitor economy. They come for culture, outdoor activities and scenic beauty. When surveyed most reply that Scenic beauty brings them here. When an economy hangs on the color of some leaves in the fall, it's time to look at what creates and preserves this beauty. It's not houses, or 4-lane highways, nor even malls. We all know what it is: fields, hedgerows, mountain slopes and summits, forests and trails, rivers and brooks, ponds and marshes. The Greylock Center has them all, and it is some of the most beautiful land in the commonwealth. Why are we burying it in houses, and fake institutes? Nobody ohs and ahs over them.

If the Center is built out the way it is planned, we will be throwing an economic asset down the drain, irretrievably.

Chapter 676 is 15 years old. Perhaps it is time to bring it up to date, to conform to the need for preserving open space for all.

I support some kind of development and management of this property, but the goal must be to preserve the natural beauty, while allowing and guiding people in its enjoyment. A

hotel, golf course and environmental education may work, along with trails and many other forms of outdoor activities.

Possibly just a network of trails for many uses, management of the fields, forests, hedgerows and a modest lodge with cabins and camping. People from all over are already enjoying this land. They also visit restaurants and all the other attractions of the area. They bring inmoney, just as the visitors to Tanglewood or the Museums do, just as the leaf-peepers do.

The land can be a park-like or civilized wilderness, between the settled town and Mt. Greylock"s wildness. That kind of a park would be unique.

Please, let's eliminate the houses and institutes.

Thank you for considering this.

Sincerely,

Pamela B. Weatherbee

Pamela B. Weatherbee

DF

Mary Ann Wojtaszek
69 Summer Street
Adams, MA 01220
413-743-9452

OCT 08 1999

Dear Secretary Durand,

Just a note about my feelings about the Greylock Glen project.

Five out of 7 afternoons my sister, often a friend or two; my dog and I spend time on the reservation finding our daily dose of peace and quiet and return home rejuvenated and happy.

I speak to so many friends and neighbors and rarely hear anyone in favor of the development at the Glen as it is being offered. The last meeting I attended two weeks ago left me disturbed at what appears to be a Selectmen's-only deep desire to see this thing through, despite the damage to the forests and natural beauty of the area.

52.1 If something must be done to this area of our town to attract tourists, I would hope it could be done in a simpler, less destructive way.

Thank you for weighing the desires of this community and helping us not to regret greatly a decision which cannot be easily reversed.

Sincerely,

Mary Ann Wojtaszek

Mary Ann Wojtaszek

Appendix A

Greylock Center Stewardship Plan

1.0 STEWARDSHIP AUTHORITY

1.0 STEWARDSHIP AUTHORITY

1.1 Department of Environmental Management

Greylock Center is a cooperative venture between the Massachusetts Department of Environmental Management (DEM), owner of the site since 1989, Greylock Management Associates (GMA), the designated private development team and the Town of Adams. The property was purchased by the Commonwealth of Massachusetts in accordance with Chapter 676 of the Acts of 1985, a legislative action which specifically calls for development and lease of the parcel to support recreational use of the site and to stimulate the local economy through a public-private endeavor. A copy of the enabling legislation is provided in Appendix A of this Stewardship Plan.

Chapter 676 was the outcome of a local initiative to safeguard the adjacent Mount Greylock State Reservation from impacts of potentially incompatible private development. In late 1984, area residents, business leaders and local officials met with environmental organizations and State officials to generate a list of desirable uses for the site. This resulting plan called for the creation of a regional economic development and recreational facility through a joint public-private development of the site. In 1985, legislation was drafted authorizing DEM and the Division of Capital Planning and Operations (now Division of Capital Asset Management, DCAM) to undertake a public-private recreational and economic development project, while ensuring that the unique scenic, natural and historic qualities of the Mount Greylock State Reservation would be protected. The legislation, Chapter 676, was enacted under an emergency preamble, and specifically authorized the acquisition and development of the land for "general recreational purposes and for the development of those residential and commercial facilities and improvements thereon which the Commissioner deems appropriate for the successful realization of said recreational purposes" (Chapter 676 of the Acts 1985). Chapter 676 also restructured the Board of Environmental Management to better safeguard Mt. Greylock Reservation by establishing environmental advocacy representation among the Board membership.

DEM shares its stewardship obligations with its private partner, GMA. The allocation of rights and responsibilities between DEM and GMA is described in Section 4.

1.1.1 DEM's Mission

The mission of the Department of Environmental Management is to exercise care and oversight for the natural, cultural and historic resources of the Commonwealth and to provide quality public recreational opportunities which are environmentally sound, affordable and accessible to all citizens.

To carry out its mission, DEM investigates, analyzes and demonstrates the wise stewardship of the Commonwealth's natural, cultural and historic resources; develops and maintains public access to such resources in the rural, suburban, and urban areas of the Commonwealth; provides public recreation and educational programs; enhances the quality of these resources through statewide resource planning protection and regulatory programs; and manages, protects and conserves all public lands, waters and facilities of the Commonwealth that have been entrusted to the care of the Department for future generations.

1.2.1 Greylock Center Master Plan

In accordance with legislation which enabled the purchase of the Greylock Center property, DEM completed an extensive master planning process. The master plan establishes goals and objectives to guide the development and recreational use of the property, and identifies those portions of the property best suited to development or conservation activities. This Stewardship Plan establishes explicit protocols for implementing master plan goals, as described further in Section 2.

1.2 Master Lease Provisions with Greylock Management Associates

Under the legislative authority of Chapter 676 of the Acts of 1985, DEM intends to enter into a Master Lease with Greylock Management Associates (GMA). The Master Lease will require all development to comply with the Site Master Plan and the conditions of any required permits for the construction and operation of Greylock Center.

The Commonwealth will lease the lands upon a finding that:

- The Master Lease will promote the realization of the purposes of Chapter 676 of the Acts of 1985;
- The lease implements the Greylock Center Master Plan including land use designations;

- Under the lease documents, DEM and DCAM will retain sufficient design review approval, and such other means of design and use control to protect the unique scenic, natural, and historic qualities of the adjacent Mount Greylock State Reservation; and
- Lease of the lands shall be on such terms and conditions determined by the Commissioner of DEM to be in the best interests of the Commonwealth.

In turn, DEM will confer certain rights of ownership and operation for discrete facilities to GMA as the primary lessee. As stipulated under the conditions identified above, GMA, and /or its designees, share responsibility with DEM toward implementing the objectives of the Greylock Center Master Plan.

1.3 Town of Adams

1.3.1 Conservation Restriction

In order to ensure perpetual protection of undeveloped portions of the Greylock Center property (approximately 790 acres), DEM will grant a Conservation Restriction to the Town of Adams Conservation Commission (ACC). The ACC will thereafter be responsible for monitoring compliance with the terms of the Conservation Restriction, which will permanently prohibit site development activities beyond those described in the Greylock Center Environmental Impact Report. The ACC will be provided with an annual report by the Greylock Trust (see 1.4 below), the designated land stewardship manager for the property.

1.3.2 Local Land Use and Building Codes

The Town of Adams will retain management authority over site planning and design through the General Laws of the Commonwealth of Massachusetts, Chapter 40A and other local regulatory and permitting authorities through full build-out of the Greylock Center project under its Planned Unit Resort Development zoning bylaws and other applicable local land use and building guidelines.

Anticipating the development of the property , the Town ratified "Planned Unit Resort Development" (PURD) conditions among the general zoning bylaws. The PURD bylaws have been approved both by Adams Town Meeting and the Massachusetts Attorney General's Office.

The PURD bylaws [Town of Adams Zoning By-Law, Article IV, Section 4900] provide guidelines to ensure that the proposed development preserves the

integrity of the site's natural resources and arranges land uses in a complementary manner. These by-laws have been taken into consideration throughout the planning and design process for Greylock Center, and largely parallel the analyses conducted during MEPA review of the project.

1.4 Greylock Trust

The Greylock Trust will be a charitable, not for profit organization formed by DEM and GMA to manage the 790 acres of undeveloped land to be protected under a Conservation Restriction held by the Town of Adams. The Trust will be modeled after the successful Wintergreen Foundation at the Wintergreen Resort in Virginia (see Appendix A), and will be responsible for coordinating stewardship recommendations presented in Section 5.4. The mission of this organization will be to foster the understanding, appreciation and conservation of the Greylock Center site as well as the adjacent Mount Greylock State Reservation and the Northern Berkshire region. The Trust will be governed by a Board of Trustees initially consisting of a representative of DEM, GMA, the Town of Adams, and two additional members selected by the Commissioner of Environmental Management. The Board of Trustees may be enlarged at a later date to provide representation for additional Greylock Center property stakeholders.

Activities of the Trust will be funded by assessing other site users (i.e., businesses and residents) a percentage of their gross annual income, sales price, or real estate value, selling memberships, and charging camping and equipment rental fees. These assessments will be specified in the Master Lease with GMA. If necessary, DEM and GMA will provide initial start-up funding for the trust. However, it is anticipated that ongoing operating expenses will be fully funded by revenues generated by Greylock Center facilities.

2.0 GREYLOCK CENTER MASTER PLANNING PROCESS

2.0 GREYLOCK CENTER MASTER PLANNING PROCESS

2.1 Introduction

The Greylock Center property has been subject to a number of development proposals, one of which was partially completed in the 1970's. Following the demise of the first major development on the site, concerned citizens convinced the state legislature to acquire the property in order to protect the site's most unique and sensitive resources, while also acknowledging the necessity of sustaining an economic return from the property for the host community of Adams. In order to meet this dual objective, a master planning process was undertaken which is described further below. The history of the site and the outcome of the master planning process that followed state acquisition of the property provides the basis for development of the present Stewardship Plan.

2.2 Prior Site History and Master Planning Process

2.2.1 Early Development Proposals

Long a destination for recreationists and naturalists, Mount Greylock itself and the abutting property on its eastern flank have been the subject of a variety of development proposals seeking to capitalize on the natural beauty and recreational opportunities of the site. Numerous modest improvements had been implemented during the twentieth century to celebrate the summit and improve access to the peak, both simply to enjoy the vista, and subsequently in response to a growing interest in downhill skiing. The era of the Civilian Conservation Corps (CCC) saw substantial expansion of recreational facilities throughout Mt. Greylock Reservation, including, notably, the development of the Thunderbolt ski trail, which hosted the first Massachusetts United States Eastern Amateur Ski Association (USEASA - now the United States Ski Association) downhill championship race on February 17, 1935.

In 1953, the Massachusetts Legislature created the Tramway Authority, a quasi-public agency empowered with the ability to float 25-year tax free bonds for the purpose of developing a cable-supported aerial passenger car to the summit. Interest in Thunderbolt waned as insufficient snow accumulation, combined with competition from ski resorts with a more predictable base and improved up-hill transportation, led the USEASA to abandon Mt. Greylock for its competitive racing events in 1956. The prospect of a ski resort, however, had hardly withered, and the earliest major development proposal for the site occurred in the 1960s for construction of a ski area with the world's largest tramway and an international shopping center. This plan drew strong

opposition and the legislature abolished the Tramway Authority, placing care of the Reservation in the hands of the Department of Natural Resources, now DEM.

Another development attempt followed in the 1970s, when ELCO Resort Developers (ELCO) assembled private lands along the eastern flank of the Mt. Greylock Reservation. ELCO completed construction of an 18-hole golf course, (discussed further in Section Six), partially completed an alpine ski area with several lifts, residential units and began construction of a 300-room hotel. At that point, ELCO abandoned the project due to financial difficulties. The property was foreclosed on by the Community Savings Bank of Holyoke, which retained ownership until 1989, when DEM purchased the site pursuant to the provisions of Chapter 676 of the Acts of 1985. During the bank's ownership of the land, several proposals, once again involving alpine skiing, were suggested for development of the site, but none ever materialized.

2.2.2 State Legislation

In late 1984, area residents, business leaders and local officials met with environmental organizations and State officials to generate a list of desirable uses for the site. This resulting plan called for the creation of a regional economic development and recreational facility through a joint public-private development of Greylock Glen. In 1985, legislation was drafted authorizing DEM and the Division of Capital Planning and Operations (now the Division of Capital Asset Management) to undertake a public-private recreational and economic development project, while ensuring that the unique scenic, natural and historic qualities of the Mount Greylock State Reservation would be protected. The legislation, Chapter 676 of the Commonwealth of Massachusetts Acts of 1985, was enacted under an emergency preamble, and specifically authorized the acquisition and development of the land for "general recreational purposes and for the development of those residential and commercial facilities and improvements thereon which the Commissioner deems appropriate for the successful realization of said recreational purposes" (Chapter 676 of the Acts 1985). Chapter 676 also restructured the Board of Environmental Management to better safeguard Mt. Greylock Reservation by establishing environmental advocacy representation among the Board membership.

2.2.3 Heritage Greylock

The first development proposal to be advanced following state acquisition of the property was developed between 1985 and 1991. Originally named the Greylock Glen Recreation Area, this development proposal later became known

as Heritage Greylock. This proposal called for the development of nordic ski trails, alpine skiing, a 30-acre lake, golf course, conference center, restaurants, shops, a performing arts center, campground facilities, and numerous clusters of condominiums with a total of 1,275 units. The primary purpose of this development proposal, as reflected by the development programming, was to provide a broad array of active recreational opportunities on the site. Public review of the development program under MEPA led to certain modifications to the original plan, including a second 18-hole golf course, a larger "village" area, capping development of condominiums to 850 units. Draft and Final EIRs were submitted for the project in the later 1980s, and a Certificate of Adequacy for the Final EIR was received from MEPA in July of 1988.

However, the Heritage Development Group proposal was withdrawn as a result of a statewide economic recession and decision by the Weld administration not to sign a Master Lease for the property. Following economic recovery, a Notice of Project Change was filed with MEPA in 1995, which resulted in the formal closure of Heritage Greylock EOEA File No. 5499 and the determination that a new ENF should be filed in accordance with a new Master Plan that had been developed in 1994.

2.2.4 Master Planning Process Leading to Greylock Center Program

Despite the setback caused by the withdrawal of the Heritage development, EOEA and DEM reaffirmed their support for future development proposals consistent with the enabling legislation. In keeping with the Commonwealth's commitment to the project, DEM Commissioner Peter C. Webber appointed a 22-member Greylock Center Advisory Committee (CAC) to formulate a new Master Plan for the project site. The Greylock CAC was drawn from residents, business people and public officials from the Town of Adams, environmental advocacy groups, tourism proponents, business development organizations, the Mount Greylock State Reservation Advisory Committee and state agencies.

2.2.5 Public Participation in the Site Planning Process

In addition to the nearly five years of work by the Greylock CAC, broad public participation and input have been sought throughout the planning process for the Greylock Center project. Working closely with the Greylock CAC, DEM developed conceptual site plans in October 1992 and October 1993. Later on, in February 1996, DEM developed a program accommodation plan based on the proposed Master Plan revisions. Subsequent to the selection in September 1996 of the designated private development partner, Greylock Management Associates, there was an intensive period of additional public participation in

arriving at the site plan presented in the ENF. This comprehensive public participation process led to the development of a Master Plan which placed greater value on the protection of environmental resources on the site than the Heritage Greylock proposal.

2.3 Master Plan Goals and Objectives

Subsequent to the legislation which enabled DEM to purchase the Greylock Center property, a master plan was developed, leading to the introduction of environmental and educational goals for development activities, in addition to the economic and recreation objectives set forth in Chapter 676. By incorporating these environmental and educational goals within the Greylock Center Master Plan, DEM's land stewardship vision was codified, as articulated in the following mission statement presented in the Master Plan:

> *Greylock Center will be a recreational and educational facility created by a joint public and private undertaking, providing economic benefits to the Berkshires in a manner that stresses environmental awareness and sensitivity of design, development, and operation. Greylock Center is intended to exemplify a sustainable approach to development, protecting the natural environment both of the site and the neighboring Mount Greylock State Reservation and demonstrating that sustainable approaches to development are good (profitable) for business as well as being good business.*

The Master Plan proceeds to establish four 'distinct but complementary' goals. These goals are: (1) public recreation; (2) regional economic development; (3) education; and (4) the protection and appreciation of Mount Greylock State Reservation resources. The full text of the Greylock Center Master Plan is incorporated by reference, and is available at the Adams Free Library and through DEM.

While the Greylock Center development program has been designed to meet the four goals of the Master Plan, the present Stewardship Plan focuses on establishing guidelines for protection and management of natural and cultural resources within areas which are not proposed for development for the most part (stewardship recommendations do overlap with the trail system and out-of-play areas of the golf course). The Stewardship Plan additionally provides recommendations for sustaining critical habitat characteristics for native plant and wildlife species where active management measures are warranted.

3.0 EXISTING NATURAL AND CULTURAL RESOURCE DATA

3.0 EXISTING NATURAL AND CULTURAL RESOURCE DATA

3.1 Introduction

As a precursor to preliminary planning for the development of Greylock Center, background research was conducted to assess both natural and cultural resources supported by the 1,063 acre site. DEM reviewed pre-existing information collected in conjunction with earlier development proposals for the site, and supplemented this data by commissioning additional natural resource field surveys.

The Center for Ecological Technology (CET) was retained to conduct an inventory and assessment of natural resources across the site. CET assembled a team of naturalists, biologists, and geologists to gather data both from background sources and more importantly through direct field observations to augment pre-existing data. Their findings are detailed in a report entitled "Natural Resources at Greylock Center: Inventory and Assessment", which was submitted to DEM in March 1996. Section 3.2 summarizes natural resources data collected by the CET team.

Review of background information on cultural resources revealed that the property contains relatively few extant cultural resource features. Cultural resources were inventoried by University of Massachusetts (UMass) Archaeological Services staff in the mid-1980s in association with environmental analyses conducted for an earlier development proposal for the Greylock Center site. The UMASS study assessed the prehistoric and historic potential of the area proposed for development, including background research and data collection from field investigations. The results of the study were summarized in a 1986 report, entitled "Archaeological Locational Survey, Greylock Glen Development Project, Adams, Massachusetts". A summary of this study is provided in Section 3.3.

The property, which consists of several old farms acquired by a private developer in the 1960s, was substantively altered by the Echo Resort development efforts which failed in the mid-1970s. An 18-hole golf course, maintenance garage, downhill ski area and foundation for a lodge were built, leaving large areas of the site in a disturbed condition, and abandoning several partially constructed concrete and steel structures across the site. In certain areas, particularly the central portion of the site, topsoil had been stripped, topography modified, and wetlands were altered, creating more extensive wetlands than had been present prior to development activities, and changing the functions and values of pre-existing wetland resources. Ironically, this very

disturbance has resulted in the establishment of numerous habitat types across the property, rendering the property particularly rich in species diversity.

In addition, the calcareous geology of the site, and proximity to the vast undeveloped forest which comprises Mount Greylock Reservation (some 12,500 acres of protected lands), result in a slightly basic pH and negligible levels of chemical contaminants found in water samples across the property. These conditions allow certain plants and animals to flourish, whose range is otherwise restricted by typically more acidic conditions and cumulative effects of development.

Proximity of the site to the extensive forested lands of the Greylock Reservation further contributes to the diversity of wildlife. As a complement to these extensive forested lands, the Greylock Center Stewardship Plan seeks to provide habitat types which have diminished as a result of the decline of agriculture in the region, and which require active measures to ensure their continuation.

3.2 Habitat Types Presently Represented on Greylock Center Property

Three primary habitat types, largely defined by vegetative cover, are represented across the Greylock Center property: Forests, Open Areas, and Surface Waters (including wetlands, streams and ponds). Within each of these general categories, a number of sub-categories have been identified in the CET inventory. A discussion of habitat values provided by the three primary habitat types follows, while readers should refer to the CET document for detailed descriptions of vegetative cover sub-categories. Two tabular inventories from the CET report that listed amphibian, reptile and bird species observed or presumed to occur on the Greylock Center site are attached to this Stewardship Plan as Appendix A, as these tables provide an excellent cross-reference for targeting management activities to sustain and enhance the preferred habitat of specific species.

3.2.1 Forests

Several types of forested habitats and several forest age classes are represented on the site. Deciduous, coniferous, and mixed deciduous/coniferous forests are all present on the site. Some wildlife species prefer deciduous forest (e.g., tree swallow, warbling vireo, white-breasted nuthatch, gray squirrel, meadow vole), while others prefer coniferous forest (e.g., Red-backed Nuthatch, Magnolia Warbler, Red Squirrel, Red-backed Voles). The presence of evergreen trees within deciduous forest provides important shelter for wildlife during winter storms and nesting areas for certain species of raptors (e.g., Great Horned Owls).

In addition to different forest types, several forest age classes are also present, including old field/shrub, sapling, pole, and both young and mature sawtimber. Like other habitats on the site, forests of specific age classes are required by some species as habitat. For instance, Brown Thrashers, Black-billed Cuckoos, and Chestnut-sided and Mourning Warblers are considered shrubland specialists. Rose-breasted Grosbeaks, American redstarts, Ruffed Grouse and Woodcocks prefer dense stands of saplings or pole forest. Red-eyed Vireos, Wood Thrushes, Scarlet Tanagers and Barred Owls are examples of bird species that prefer mature forests.

The diversity of forest types and age classes on the Greylock Center property provide suitable habitat for a wide variety of wildlife species. In order to sustain this diverse habitat, ongoing management is warranted, and is particularly important for the maintenance of young forest habitat.

3.2.2 Open Areas

Open areas presently extant (prior to construction of the proposed Greylock Center facilities) on the property include old fields, former cropland, wet meadows and areas previously cleared for the Greylock Glen Resort golf course. Hedgerows and abandoned orchards are also categorized among open areas, as they attract many of the same species, who seek vertical structure and cover of taller deciduous growth for perching and as a temporary refuge from coterminous fields. Many open areas on the Greylock Center property are rapidly becoming reforested and the habitat values represented by these areas is concurrently diminishing.

Open areas provide habitat for a number of wildlife species which rely on sun-loving vegetation for their food and nesting requirements. Open field communities provide primary habitat for many species of birds which occur on the site (e.g., Goldfinches, Bobolinks, Meadowlarks and Indigo Buntings). Other species of birds rely on fields for foraging while needing abutting forest for nesting. Examples of such species include Red-tailed Hawks, American Kestrels and Eastern Bluebirds. In addition to birds, fields provide important habitat for cold-blooded snakes and turtles seeking the warmth of the sun, as well as many small mammals, butterflies, dragonflies and bees, which forage for nectar and seeds of flowering plants typically found in fields.

Early successional forests provide habitat for a variety of birds, some of which require seedling, shrubland, sapling or pole forests. Some of these species are becoming increasingly uncommon as early successional forest habitat in has been continually waning in Massachusetts with the decline of agricultural

practices. Species such as the Black-billed Cuckoo, Mourning and Chestnut-sided Warblers, Rufous-sided Towhee, Rose-breasted Grosbeak, Woodcock and Ruffed Grouse would all benefit from a forest management program designed to maintain the favorable mix of forest age classes that currently exists on the site.

3.2.3 Surface Waters

Wetlands represent a nexus among habitats, as all species require water for basic life functions. Water dependent species are only found in or near sources of water, while other species seek water as transients within these wetland habitats. Wetlands and streams on the Greylock Center property overlap both forested and open areas, perennial stream corridors provide critical means of wildlife passage from one habitat type to another.

Some of the richest wetland habitat on the site is located in the central portion of the site. This area includes wet meadows, old fields, and several ponds created as golf course 'hazards' as storage for golf course irrigation water. Beavers have also established themselves in this vicinity, manipulating water levels to suit their own habitat requirements, coincidentally creating a reliable source of water interspersed with live and dead trees, fringed with emergent vegetation, and providing habitat for a rich mix of wildlife species that would otherwise be unlikely to use the Greylock Center site. Species observed in this area include: Wood, Mallard and Black Ducks, Great Blue Heron, Woodcock, Kingfisher, Painted Turtle, Beaver and Mink.

Several ponds on the site vary in their value for wildlife. Temporary ponds in the northern extents of the central portion of the site provide vernal pool habitat for spotted and Jefferson salamanders, wood frogs, spring peepers and American toads. Ponds fringed with cattail provide good quality habitat for Red-spotted Newts, Green and Pickerel Frogs, Song Sparrows, Common Yellowthroats, and probably serve as foraging areas for Great Blue and Green Herons, Kingfishers and various ducks.

Streams provide some of the most important habitat on the Greylock Center site. Flowing down steep slopes out of the Greylock Reservation, Pecks and Hoxie Brooks are clear, cool, fast-flowing mountain streams that provide habitat for two state-listed wildlife species. These species, Spring Salamanders and Appalachian Brook Crayfish, have been found in several locations, and are presumed to exist in streams throughout the site. In addition, groundwater-fed streams provide critical habitat for a thriving population of native brook trout.

3.2.4 State-Listed Species Habitat

State-listed plant and animal species typically have very specific habitat requirements, and are particularly vulnerable to human activity and competition from other species which tolerate a broader range of environmental factors. Habitats of state-listed species occur at various locations throughout the Greylock Center property. The topography and elevation of the site's sub-montane setting provide a transition to more boreal climates and plant community types than is found in most areas of Massachusetts. Many of the rare species onsite have a specific affinity for calcareous hydrology, boreal climes or some combination of the two. Alternatively, some species and community types associated with the Greylock Center property occur widely, but are infrequently distributed across the state. State-listed species observed by field scientists working collaboratively under CET are provided in Table 3-1. This table also documents two state-listed species confirmed on the site after publication of the 1996 CET report.

These areas warrant specific management measures to ensure the viability of the preferred habitat features, as is discussed in Section 6 of this stewardship plan.

3.2.5 Special Status Ecological Communities

In addition to the above-referenced state-listed species, two ecological communities recognized as "Priority Natural Communities" by MA NHESP also occur onsite. These communities are also ranked with regard to their global rarity. Ranks range from R1 (global most rare), S1 (state rarest) to G5S5 (least rare or uncommon). A discussion of these special status communities is provided below beginning with the rarest community type found on the Greylock Center property.

3.2.5.1 Calcareous Fen

Calcareous fens are nearly exclusive to the Berkshire region and ranked G2S2. The unique geologic conditions of the region provide the appropriate conditions for fen evolution, which are dependent upon, and develop in association with areas where groundwater emerges from a limestone substrate and surface discharge is relatively constant due to the size of the aquifer and the volume of discharge. Unlike bogs and marshes in which water levels often fluctuate seasonally, fen communities are typified by a more uniform hydrology which, in turn, supports an often distinct plant community which sometimes includes rare plant species.

Table 3-1 State-Listed Species Associated with Greylock Center Property

Scientific Name	Common Name	MESA Status*	Habitat Requirements/Comments
Birds			
Accipiter striatus	Sharp-shinned Hawk	SC	Migrant and winter resident; requires remote stands of conifers within larger deciduous forest. Observed on site by CET, however nesting has not been confirmed.
Dendroica striata	Blackpoll Warbler	SC	Prefers spruce forest for nesting; Mt. Greylock only known habitat in MA. Observed on site by CET, however nesting has not been confirmed.
Oporornis philadelphia	Mourning Warbler	SC	Requires young forest/ shrub habitat - periodic forest management/ disturbance; Mt Greylock State Reservation only known habitat in MA. Observed on site by CET, however nesting has not been confirmed.
Amphibians			
Gyrinophilus porphyriticus	Spring Salamander	SC	Largest and rarest stream-dwelling salamander in MA; requires cold, swift-flowing streams with large rocks; found in Hoxie, Thiel and Pecks Brooks. Presence confirmed on site by CET.
Abystoma jeffersonianum	Jefferson Salamander	SC	Mole salamander which breeds exclusively in vernal pools, and requires mature woodlands for its terrestrial habitat. Presence confirmed by consultants to the Greylock Center design team in the spring of 1999.
Butterflies			
Erora laeta	Early Hairstreak	T	Beech and hazelnut are host for larvae.
Pieris napi oleracea (aka Artogeia napi)	Mustard (Veined) White	SC	Toothworts (Dentaria spp.) are host to larvae; fields necessary for adult foraging.

continued

Table 3-1 State-Listed Species Associated with Greylock Center Property (continued)

Scientific Name	Common Name	MESA Status*	Habitat Requirements/Comments
Beetles			
Desmocerus palliatus	Eastern Elderberry Longhorn Beetle	SC	Requires either common elderberry (found in wetlands) or red elderberry. Presence confirmed on site by CET.
Crustaceans			
Cambarus bartonii	Appalachian Brook Crayfish	SC	Found only in Hoosic River tributaries; each population isolated from others due to physical barriers along Hoosic; requires cool water, large rocks for cover and shade
Plants			
Blephilia hirsuta	Hairy Woodmint	E	Fertile, moist to wet calcareous soil
Carex baileyi	Bailey's Sedge	E	Wet, seepy soil, such as in wet banks of ravines and edges of forested wetlands in higher elevations
Carex tetanica	Fen (Rigid) Sedge	SC	Grass and sedge-dominated fens exhibiting the discharge of cold calcareous water
Galium boreale	Northern Bedstraw	E	Grass and sedge-dominated fens exhibiting the discharge of cold calcareous water
Milium effusum	Woodland Millet	T	Rich soils associated with rich mesic forests or other mature hardwood forests
Ribes lacustre	Bristly Black Current	SC	Rich mesic forests influenced by calcareous bedrock and soil
Equisetum scirpoides	Dwarf Scouring Rush	SC	Calcareous seepage on shaded cool banks. Identified by independent botanist (P. Weatherbee) in 1998.

Legend/ Notes
*Massachusetts Endangered Species Act Status:
E = Endangered
T = Threatened
SC = Special Concern

A fen community is typically self-sustaining because its consistent hydrology and alkaline water preferentially support "fen species". Many fens in the Berkshire region, however, appear to have benefited from moderate perturbation in the past, such as light pasturage or other low-intensity agricultural activity. In the complete absence of future disturbance, species diversity gradually may diminish within a fen; rare and strict fen-associated plant species are typically the first to decrease. There are two calcareous fen communities on the Greylock Center site, one of which is experiencing encroachment of woody plant species, the other of which is partially flooded by beaver activity.

3.2.5.2 Calcareous Outcrop

Calcareous outcrops (G4S2) are exposed alkaline bedrock materials which provide open, sunny conditions with a paucity of soil. Due to the thin to non-existent soils, these areas discourage trees form becoming established, and unusual ferns and wildflowers are able to thrive in the absence of competition. Although an unusual community type, no rare species occur in the vicinity of the calcareous outcrop on the Greylock Center property.

3.2.5.3 Rich Mesic Forest

Rich mesic forest (G4S3) communities are a MA NHESP-designated priority natural community type. These forests develop a characteristic floor of composted leaf litter and duff. Due to abundant moisture and air movement fostered by gradual slopes, decomposition and nutrient availability are enhanced, thereby providing suitable habitat for a unique assemblage of plant species, particularly in the understory where herbaceous species with an affinity for calcium carbonate thrive.

Mesic forests require a combination of physical features and lack of disturbance to develop. Mature examples of this community not only support diverse plant associations but also attract forest-interior migratory songbirds and numerous species of mammals. Being an upland community, rich mesic forests are not afforded the degree of regulatory protection that safeguards wetland resources; these forests are, therefore, vulnerable to unchecked alteration. However, rich mesic forests on the project site lie well beyond the development envelope. As such, the Greylock Center plan provides for the preservation of this community type, buffered and enhanced by large contiguous tracts of other forest types onsite and by the adjacent Mount Greylock Reservation. Unlike some community types which require active management to be sustained (e.g., old fields and sapling forest), rich mesic forest relies upon lack of disturbance to

maintain critical moisture and shaded conditions preferred by those herbaceous species associated with this community type.

3.2.5.4 Vernal Pools

Vernal pools are topographical depressions which support ephemeral pools of freshwater and provide critical habitat for several invertebrate and vertebrate wildlife species. Formal certification of a vernal pool requires the collection and confirmation of the presence of certain species which rely upon vernal pool habitat characteristics, either for a portion or the entirety of their life cycle. There are presently three vernal pools that have been formally certified on the Greylock Center property. One of these occurs in the southern portion of the site, and two have been documented along the northern extents of the wetland complex in the central glen area. Vernal pools are protected under the Massachusetts Wetlands Protection Act if they occur within wetland resource areas, and are also protected Title 5 of the Massachusetts Environmental Code, Section 401 of the Federal Clean Water Act, the Massachusetts Surface Water Quality Standards (which are related to the federal Section 401 regulations), and the Massachusetts Forest Cutting Practices Act regulations. Moreover, two of the vernal pools on the Greylock Center property have been documented to provide breeding habitat for the state-listed Jefferson salamander.

3.3 Cultural Resources

University of Massachusetts (UMass) Archaeological Services performed an archaeological locational survey of the Greylock Center property in the mid-1980s as part of the previous EIR advanced for the Greylock Glen project. This study assessed the prehistoric and historic potential of the area proposed for development, including background research and data collection from field investigations. The results of the study were summarized in a 1986 report, entitled "Archaeological Locational Survey, Greylock Glen Development Project, Adams, Massachusetts". The findings of this study are provided below.

3.3.1 Prehistoric Context

The Greylock Center property is located in a region characterized by low prehistoric site density. Due to the scarcity of sites in the general area, it was expected that there would be few prehistoric sites on the property, and that any that might be encountered would be of small size. Moreover, given the predominantly steep topography of the site and a history of logging activity, it was anticipated that any potential sites were likely to have suffered destruction

due to erosion and impacts of heavy equipment on the shallow soils. Following the excavation of 491 shovel test pits by UMass archaeologists in strategic locations, no conclusive evidence of prehistoric occupation was detected.

3.3.2 Historic Context

European settlement in the Adams area did not occur until the middle of the 18th century due to the absence of easy access to established population centers in the Connecticut River Valley, the Hudson River Valley, and along the coast, as well as conflicts with the native population. The Town of Adams was incorporated in 1778.

Agriculture formed the economic base of Adams following its initial settlement, owing to the fertile soils found along the Hoosic River valley. According to a 1790 map, the valley bottom was open land, as were portions of the western side of town, which includes the project site. A review of maps dated 1790 through 1858 indicates the project area to have been undeveloped and at least partially wooded through the mid-nineteenth century. The cleared land on the western slope of Mount Greylock was intensely farmed after 1870 and supported the site of an expanding dairy and apple orchard industry. Scattered houses along West Mountain Road and in the Gould Road/Thiel Road area appear on maps dated 1876, most likely in response to this economic activity.

Additional construction and land development took place between 1876 and 1894, as reflected in period maps, but declined around the turn of the century. The historical background research for the Greylock Glen project confirmed the location of a 19th century dairy farm with an intact spring house, the remains of several 19th to 20th century farmsteads, (one of which included a livestock manure tunnel dated 1915), and the locations of 20th century summer camps. Extensive earthwork associated with previous development projects destroyed most of these remains, and very few artifacts were recovered through subsurface testing conducted in 1985. The most significant find was a turn of the century bottle dump, the contents of which were collected and subsequently researched in the laboratory.

3.1.3 Summary of Historical and Archaeological Findings

The archaeological survey report prepared by UMass Archaeological Services was submitted to the MHC in 1986. The survey report concluded that no sites eligible for listing in the National Register of Historic Places were identified within the project area, and no additional survey work was recommended. The MHC requested that inventory forms be completed and submitted for the spring house and livestock manure tunnel.

Following review of these inventory forms and the DEIR for the Heritage Greylock project, the MHC determined that the project area contained no significant archaeological or historic properties. Notwithstanding the MHC determination that the project site does not contain any cultural resources eligible for listing in the state Register of Historic Places, certain cultural features are worthy of protection and maintenance, most notably the 1915 manure tunnel and remnants of stone walls throughout the site, as these artifacts reflect the agricultural history of the site and provide a link to a heritage which is unique to New England.

4.0 STEWARDSHIP RECOMMENDATIONS AND IMPLEMENTATION GUIDES

4.0 STEWARDSHIP RECOMMENDATIONS AND IMPLEMENTATION GUIDELINES

4.1 Introduction

To ensure that the property is managed as a whole, a land stewardship manager, the Greylock Trust, a charitable not-for-profit organization formed by DEM and GMA and the Town of Adams, will be designated to oversee implementation and refinement of the habitat management and monitoring activities. The primary goal of the Trust is to sustain diverse vegetative and wildlife associations, and prevent cumulative impacts of human activity from compromising resources of the adjacent Mount Greylock State Reservation.

It is critical that a single entity retain coordinate stewardship activities undertaken by separate entities. Rather than the manager of each development component (e.g., golf course manager, environmental center manager, hotel manager, etc.) deciding what practices to use, all Greylock Center program facilities would follow a comprehensive land stewardship plan. The Greylock Trust, as the land stewardship coordinator, will review land management programming, and advise and assist various facility managers to address their specific needs and concerns. For example, Greylock Trust staff will have an overall grasp of what turf management practices are being utilized within the golf course, what is being planted, the status of any invasive species colonies and eradication efforts, water quality, etc. The Trust will also provide a clearinghouse for monitoring data, make appropriate recommendations regarding necessary changes in activity on site and provide annual reports to the Adams Conservation Commission.

Land stewardship activities to be coordinated by the Trust within each of the Greylock Center habitat types are discussed below.

4.2 Sensitive Natural Communities

Stewardship recommendations for sensitive natural areas address the most unique and/or vulnerable resources, such as rare species habitat and vegetative communities identified as 'Priority Natural Communities' by the Natural Heritage and Endangered Species Program. The Greylock Cneter property supports three such communities: Rich Mesic Forest, Calcareous Fens, and a Calcareous Outcrop. The following management recommendations should be implemented to sustain these particularly sensitive resources.

4.2.1 Habitat Enhancement

No physical alteration of unique natural communities is recommended unless there is an indication that intervention is required to ensure protection or enhancement of habitat characteristics within these areas. For instance, it may be determined through monitoring that discrete segments of established trails require maintenance to prevent erosion, such as the creation of water bars. As another example, if an invasive exotic species is observed, eradication efforts may be warranted (e.g., oriental bittersweet, disseminated by birds, is becoming ubiquitous even in shaded woodlands; this species is easily managed by hand pulling of young seedlings, whereas it is difficult to control once established.) Aside from such 'light-handed' activities geared specifically toward protecting the ecological integrity of the riparian corridor, the intention is to sustain the ecological integrity of unique natural communities.

4.2.2 Monitoring

Water Quality Monitoring

DEM has committed to conduct baseline sampling and to perform quarterly water quality monitoring of the three perennial streams which discharge off-site (Hoxie Brook, Peck's Brook, and an unnamed tributary to Peck's Brook). In addition, it is recommended that Greylock Center educational programming (e.g., Nature's Classroom and the Park's College) supplement this sampling program at locations which are readily accessible along the multi-use trail network. The educational programs should develop sampling regimes that would serve to target potential sources of sampling constituents (e.g., immediately downgradient of Gould Farm, above and below active beaver dams)

Rare and Native Wildlife Species Population Monitoring

Periodic inspection is recommended to assess populations of Appalachian Brook Crayfish, Northern Spring Salamander, and native brook trout. Such monitoring will require obtaining a permit from the Massachusetts Division of Fisheries and Wildlife. Aquatic species monitoring should be performed by a qualified biologist, and may be appropriate to the DEM Parks College programming or through the curriculum offered by area colleges and universities.

Rare Plant Species Monitoring

Several rare plant species are located on the Greylock Center property that warrant annual monitoring. In addition, a permanent vegetation plot was established by Pamela Weatherbee in the vicinity of one of these rare plant species locations in conjunction with the natural resources inventory and

assessment coordinated by the Center for Ecological Technology (CET). This permanent plot location, as with the rare species locations, should not be publicly disseminated, however monitoring of these locations should be performed by a botanist under applicable DFW permit conditions.

Invasive Plant Species Monitoring

As previously discussed, invasive species monitoring and prompt eradication is critical to maintaining the ecological integrity of natural areas. Invasive species monitoring accordingly requires continual vigilance, and monitoring should be conducted on an ongoing basis as an adjunct to other monitoring activities (e.g., rare plant monitoring and trail monitoring), by instructing persons engaged in such activities with the ability to identify invasive species. The Guide to Invasive Plants In Massachusetts, published by the Massachusetts Natural Heritage and Endangered Species program, provides an excellent reference for the identification of such species.

Trail Conditions Monitoring

Trails in proximity to sensitive natural resources will be monitored on an semi-annual basis, once in late spring to assess conditions before peak season, and again in the autumn to determine whether any mitigative measures are necessary prior to handle runoff from rain events and spring runoff. Seasonal photos at fixed locations are suggested as a useful means of monitoring trail conditions over time. As an adjunct to monitoring of trail conditions, the area will also be inspected for invasive species. Monitoring shall be undertaken by DEM personnel or licensed representatives trained both in trail maintenance and in invasive species identification.

4.2.3 Environmental Education Opportunities

Due to the fragility of certain resources, only limited environmental educational opportunities will be undertaken within these areas. As part of the various educational programs, low-impact educational activities may periodically take place (e.g., bird census or trail maintenance instruction), however the intent is to minimize disturbance in sensitive areas, and only allow access via established trails.

4.2.4 Public Recreational Facilities

Due to the fragility of certain resources supported by the Greylock Center property and their proximity to Mount Greylock State Reservation, it is only appropriate to allow dispersed recreational activities, such as hiking and cross-country skiing along defined trail corridors, as currently takes place on the property, although in an unregulated manner. Proposed trail corridors as

identified in the Greylock Center FEIR will be reviewed in the field prior to development of construction specifications. Where appropriate, the alignment of the proposed corridor may be modified to minimize the grade of the trail (thereby reducing the potential for trail erosion), or to preserve a particular feature (e.g., boulders, outcrops) or mature trees.

4.3 Habitat Management Areas

Numerous opportunities exist for managing the diversity of habitat types represented on Greylock Center property. As described in Section 3, the Greylock Center site supports a diverse assemblage of habitat types, with primary categories being forests, opens areas, and wetlands. Habitat management areas include those portions of the Greylock Center property which may benefit from discrete activities specifically targeted to benefit certain plant and wildlife habitats, such as bi-annual brush-hogging to maintain shrubland habitat for songbirds, or annual mowing of a wet meadow to sustain preferred larval food sources for invertebrates, such as butterflies. Stewardship activities to sustain these habitat types are described below.

4.3.1 Enhancement of Open Habitat

Several areas will be actively managed to maintain varying levels of succession in order to sustain open habitat for species which require non-forested conditions. There are three areas in which periodic mowing will be employed to provide 'old field' and shrubland habitat: the large field at the southerly end of the Greylock Center property; areas between fairways in the 'front 9' and adjacent to the central glen wetland and areas which had previously been cleared as alpine ski slopes, which provide ideal viewing opportunities along proposed trails.

Due to the statewide shortage of this habitat type, maintenance of open areas is a stewardship priority. Existing open areas should be managed to preserve multiple stages of regrowth at various locations through the Greylock Center property. Many of these may be adjacent to and managed by the golf course operator. Each stage would feed and provide nesting sites for different species. Stages of regrowth include:

- mowed grassy fields which would attract field nesting birds such as bobolinks, savannah sparrows;
- fields with an abundance of taller growth such as goldenrods and asters with sparse shrubs; and

- fields that are on the verge of succeeding to shrublands.

These open areas will be utilized to educate visitors about species which rely upon field and shrubland plant species for nesting and foraging (e.g., butterflies, reptiles, and numerous bird species including Mourning warbler, a species of Special Concern), and the specific succesional stage preferred by such species. As with interpretive opportunities provided by wetlands (see below), management of open fields and shrublands will also include invasive species education, alerting visitors to opportunistic shrubs which displace native species, and whose structural characteristics, while appropriate and even preferable to certain birds, paradoxically render nests more susceptible to predation.

As a field begins to change into forest, it can be bush-hogged back to open field conditions thereby maintaining a rotating series of habitats. Sites for this treatment could include the old fields at the base of the ski area within the central 'glen' and golf course roughs. Groupings of trees should be preserved or introduced within these areas as perches with a natural undergrowth of grasses, forbs and shrubs.

Mowing in the fall, after all flowering has faded, preserves native forbs and grasses. Areas for bobolinks should be kept in grass and mowed in middle July after eggs have hatched and chicks fledged. Bobolinks require large expanses of grassland for nesting, accordingly the southern knoll provides ideal conditions to attempt to encourage bobolink nesting or to enhance bobolink habitat.

4.3.2 Enhancement of Wetland Habitat

Wetlands regulations in Massachusetts provide strong protection for ponds and streams, vegetated wetlands that border streams and water bodies, and floodplains. Accordingly, proactive management of wetland habitat requires formal filing and review of proposed activities under a Notice of Intent.

Two distinct wetland habitat enhancement recommendations are appropriate for areas within the Conservation Zone on the Greylock Center property: periodic mowing of wet meadow and brush-hogging of shrubland in areas adjacent to - and partially within- jurisdictional wetland resources areas associated with the wetland complex in the central glen area; and invasive species management, also within the central glen wetlands.

Maintenance of open conditions in areas which are only periodically inundated requires active, ongoing cutting of woody vegetation that may otherwise succeed into forested areas. Many species prefer open areas adjacent to or within wetlands for nesting (taking advantage of boles within wetlands as

nesting platforms which are largely inaccessible to many mammalian predators) and for feeding (whether feeding on wetland plants themselves, or on insects and fish in wetland areas). Species which rely upon open areas adjacent to and within wetlands include Great Blue Heron, Black and Wood Ducks, Tree and Barn Swallows. In order to maintain open wetland habitats preferred by these species, a vegetation management program should be developed and submitted under a Notice of Intent to clearly define the limits of vegetation cutting in any given year, and to establish that such activities would only be conducted when soils are reasonably dry and firm to allow passage of mowing or brush-hogging equipment with minimum disturbance of wetlands soils.

Invasive species management techniques should also be undertaken within those area of the central glen wetlands which are being colonized by invasive species accordance with a plan approved under a Notice of Intent/ Order of Conditions. DEM has initiated consultation with the Wetlands Restoration and Banking Program to seek their assistance in developing appropriate protocols for control of common reed (*Phragmites spp.*) and purple loosestrife (*Lythrum salicaria*). Management of these species provides an ideal opportunity for development of an educational exhibit which compares the extent (i.e., diminution) of invasive species form one year to the next.

4.3.3 Enhancement of Forested Habitat

According to the Massachusetts Division of Fisheries and Wildlife, approximately 80% of all bird and mammal species require two or three forest stages to meet their habitat needs. The remaining species require only a single forest stage, either mature or seedling forest, to meet their needs[1]. The preliminary recommendations for forest management presented below have been designed to address these habitat requirements.

The Greylock Trust will consult with DEM Bureau of Forestry staff and other experts on appropriate management of forest resources on the site. Forest management and habitat enhancement programs provide important opportunities for education for the public generally, and for those who will utilize the educational opportunities offered at Greylock Center. The Trust will work with the educational institutions affiliated with the site or in the region to develop a program to highlight the innovative forest, land management and habitat enhancement measures undertaken on site.

---

[1] DFW, 1994. Managing Forests to Enhance Wildlife Diversity in Massachusetts.

Mature Forest

Designated areas of mature forest should remain untouched to provide dead den trees, cavities, rotting nurse logs, tall trees for hawks and owls, and a natural understory of plant species associated with mature forest. Such mature forests also provide a seed reservoir to sustain populations of native forest species. In addition, conserving upland areas will help maintain habitat for state-listed wildlife. For instance, remote, forested areas containing patches of spruce, such as exist along the higher elevations along the western limits of the Greylock Center property, may provide suitable nesting habitat for sharp-shinned hawks and possibly blackpoll warblers. Areas of rich mesic forest containing populations of toothworts may provide important larval habitat for mustard white butterflies. Rich mesic forest occurs northwesterly of Peck's Brook, along the westernmost portion of the Thiel Farm parcel, and as a relatively small patch to the east of the rustic camping area. Mature forests containing beech and hazelnut may provide important habitat for larval early hairstreaks. Baseline field surveys conducted by Pamela Weatherbee in association with the CET natural resources inventory will be used to identify the best examples of each of these habitats, and monitoring of these areas will be conducted at the appropriate time of year to inventory the status of the plant of animal population (e.g., late spring for breeding bird inventory efforts, early summer for plant inventories).

Active forest management in proximity to known larval habitat for mustard white butterflies can also be undertaken to benefit the adult stage of this state-listed species. Although toothworts, the larval food plant for this butterfly, grow best in areas of mature forest, adult mustard whites often seek out breaks in the forest canopy as preferred foraging areas. Therefore, carefully planned patch cuts can be used to provide favorable foraging areas for adults in close proximity to appropriate egg-laying and larval habitat. Patch cuts may also be an appropriate tool for enhancing habitat for early hairstreaks, another state-listed butterfly that depends on mature forests for larval habitat and open areas for their adult stage.

Early Successional Forest

Given the preponderance of mature forest in the adjacent Mount Greylock Reservation, and in Massachusetts as a whole[2], efforts should be made to sustain young forests and shrubland within the Greylock Center site to sustain the presently diverse habitat afforded by the early stages of natural succession.

---

[2] ibid

Many birds prefer such 'edge' conditions for nesting, wherein they are proximate to food sources in open areas, but afforded the refuge of numerous perches in adjacent forests.

As an example, although the state-listed mourning warbler has been documented on the site, and may use the property for nesting, shrubland habitat for this species cannot be maintained over time without active management. The mourning warbler is considered a shrubland specialist, preferring habitat that typically follows in the wake of some disturbance. Natural disturbances such as fire, hurricanes and major ice storms do not occur with enough frequency to maintain populations in Massachusetts. Forest management, via the creation of small clearcuts, can be used to maintain appropriate nesting habitat for this species over time. On-going forest management that maintains early successional forest (shrubland) on the site will also benefit the black-billed cuckoo, another shrubland specialist and an uncommon bird in Massachusetts.

4.3.4 Invasive Species Management

Portions of the Greylock Center property are already being colonized by invasive species. As previously mentioned, common reed is threatening important wetland systems, and certain shrubs, such as multiflora rose and autumn olive, have begun to dominate shrublands. Proper management techniques for invasive species depends upon the growth habit of the different species considered to be invasive, and the extent to which they have become established. Ideally, such species are managed as soon as individual plants are recognized, and before they have spread to such proportion that removal by hand becomes impractical. Thus, monitoring, followed by hand removal, is the preferred management method.

Invasive plant species can change the habitat for wildlife. Significant amounts of land alteration that will take place at Greylock Center will create ideal conditions for invasion of certain exotic plant species, and even the natural processes following the abandonment of a beaver pounds can leave areas vulnerable to invasive species colonization. Land stewards must be trained in the identification of the most aggressive invasive species, and undertake appropriate efforts to manage invasive species populations, and eradicate such stands where possible.

4.3.5 Environmental Education Opportunities

Educational programming assocaited with habitat management areas will be shared between DEM and GMA or their designees. Undeveloped areas of the Greylock Center property provide many opportunities for DEM's "Watchable Wildlife" program, which identifies areas where exemplary opportunities exist

for viewing wildlife. One example is trailside interpretative signage adjacent to the calcareous outcrop, identifying specific attributes of the natural community while advising visitors to view, but not walk within this area. Another educational opportunity is development of a program identifying various features along the ADA accessible nature trail, which traverses the central glen area. Finally, there are numerous opportunities to provide educational signage to assist Greylock Center visitors in identifying a variety of bird and mammal species which utilize different habitats on the site.

The Environmental Center will serve as an important core for environmental education activities for the public at large, while the DEM Parks College will provide instruction for state agency personnel with land stewardship responsibilities. In addition, the Greylock Trust, initially accommodated in the golf club house during Phase I of the Greylock Center build-out, will develop interpretive exhibits within the club house to educate both golfers and other visitors about ongoing habitat stewardship activities being undertaken by the Trust.

4.3.6 Public Recreational Facilities

Public recreational facilities will be dispersed throughout areas where active habitat management is proposed. Many of these recreational facilities areas will be geared toward providing an educational component as well. The provision of public recreation activities is central to DEM's mission, and the Greylock Center site provides a wealth of resources suited to outdoor recreation. Recreational uses that will be encouraged proximate to habitat management areas include hiking, camping, interpretive trails, mountain biking, cross-country skiing (on both groomed and natural snow), golfing, skating, and sledding. Horseback riding will be prohibited on the site to prevent leaching of animal feces and urine into wetlands and streams. Golf carts will be restricted to designated trails only, and snowmobiles will be restricted to those trails designated for snowmobile use prior to the development of the Greylock Center trail network. No other motorized recreational vehicles will be permitted on the property.

A number of support facilities will be constructed to enhance public recreation opportunities. Various facilities may be managed by either DEM, GMA or their designees (e.g., DEM may allow a private, non-profit organization to utilize trails for educational programming) to ensure that such facilities are properly maintained (e.g., trails are not eroded, litter is promptly removed and properly discarded).

4.4 Developed Areas

Although developed areas do not lend themselves to habitat management activities, it is nonetheless important to recognize that operations and maintenance activities in developed areas may have indirect effects on adjacent natural areas. Accordingly, it is appropriate that the following management protocols be undertaken in developed areas, which include the Village complex, the club house, and the golf maintenance area.

4.4.1 Habitat Enhancement

Habitat 'enhancement' activities in developed areas will essentially be limited to assuring that landscaping in association with these locations does not introduce ornamental species with invasive tendencies. For instance, burning bush (*Euonymous alatus*) is a highly popular ornamental species, which the general public does not yet recognize as an invasive plant. All landscape materials proposed within the intensive use zone should be reviewed, and Greylock Center residents and grounds managers should be advised to consult with a pamphlet published in 1998 by the Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program (NHESP) entitled *"A Guide to Invasive Plants in Massachusetts"*, which identifies several invasive species which are commonly used in ornamental landscaping, as well as identifying species commonly known by the general public to be invasive plants.

4.4.2 Monitoring

The most important monitoring and maintenance activity within developed areas is the proper inspection and cleaning of stormwater drainage features. These should be monitored and maintained on a semi-annual basis at minimum.

4.4.3 Environmental Education Opportunities

Classroom and meeting facilities located in the Village complex will be important centers for coordination of environmental education opportunities, while areas designated for habitat management will serve as 'outdoor classrooms' as described above. The Village and clubhouse will accommodate larger groups to convene for instruction pertinent to environmental education, and smaller groups will disperse to other locations throughout the property for hands-on training.

4.4.4 Public Recreational Facilities

Management of public recreational facilities within the Village and clubhouse area will include recreational equipment rental and instruction provided by businesses housed in these locations.

Tabular Summaries of Amphibian, Reptiles and Birds Documented or Potentially Occurring on Greylock Center property

(excerpted from CET Natural Resource Inventory)

Table

Amphibians and Reptiles of Greylock Center
(X=primary habitat, x=secondary habitat)

Species	Occurrence	Forests	Fields	Shrubland	Streams	Permanent Ponds	Temporary Ponds	Beaver Pond	Swamps	Wet Meadow
Red-spotted newt	Confirmed	X				X		X	x	x
Redback salamander	Confirmed	X							x	
Two-lined salamander	Confirmed				X					
Northern dusky salamander	Confirmed				X					
Spring salamander	Confirmed				X					
Spotted salamander	Confirmed	X				x	X	x	x	
Jefferson salamander	Unlikely	X					X	x	x	
Spring peeper	Confirmed	X		x		X	X	X	X	X
Gray treefrog	Possible	X				X	X	X	x	
American toad	Probable	X	X	X		X	X	X		
Wood frog	Confirmed	X					X	x	X	
Green frog	Confirmed				X	X	X	X	X	X
Pickerel frog	Confirmed				X	X	x	X	x	
Leopard frog	Unlikely		x			x	X			X
Bullfrog	Unlikely					X	x	X		
Snapping turtle	Probable		X		x	X	X	X		
Painted turtle	Confirmed		X			X	x	X		
Spotted turtle	Unlikely	x	X	x		X	X	X	x	x
Wood turtle	Unlikely	X	X	X	X		x	x	x	X
Garter snake	Confirmed	X	X	X	X	X	X	X	X	X
Ribbon snake	Possible				x	X	x	X	x	X
Brown snake	Confirmed	X	X	x					x	x
Redbelly snake	Probable	X	X	X					x	x
Ringneck snake	Confirmed	X		x					x	
Milk snake	Confirmed	X	x	X						
Green snake	Probable		X	x						X
Northern watersnake	Possible					X	x	X		

Table 2

Birds of Greylock Center

(X=primary habitat, x=secondary habitat)

Species	Occurrence	Fields	Shrubland	Young Forests	Deciduous Forest	Conifer Forest	Ponds	Swamps	Cattail Wetlands	Wet Meadow
Great blue heron	Transient						X	X	x	
Canada goose	Transient	X					X		x	X
Wood duck	Possible breeding				X		X	X		
Black duck	Possible breeding	X	X				X	X	X	X
Mallard	Possible breeding	X					X	X	X	X
Turkey vulture	Possible breeding	X			X	X				
Sharp-shinned hawk	Possible breeding	x	x	x	X	X				
Red-shouldered hawk	Transient				X	x		X		
Broad-winged hawk	Probable breeding	X			X	x				
Red-tailed hawk	Probable breeding	X	x		X	x				
American Kestrel	Possible breeding	X	x					x		x
Ruffed grouse	Probable breeding	X	X	X	X	X				
Wild turkey	Probable breeding	X	X	X	X	X				
Killdeer	Probable breeding	X								x
Solitary sandpiper	Transient						X		X	
Spotted sandpiper	Possible breeding						X		X	
American woodcock	Probable breeding	X	X	X	X			X		X
Mourning dove	Probable breeding	X	X	X	X	X				
Black-billed cuckoo	Confirmed breeding		X	x	X	x		x		
Barred owl	Probable breeding	x	x	x	X	x		X		x
Chimney swift	Transient	X	X							X
Ruby-Throated hummingbird	Probable breeding	X	X	x	X	X				
Belted kingfisher	Possible breeding						X	X	x	
Yellow-bellied sapsucker	Probable breeding			x	X	X				
Downy woodpecker	Probable breeding		x	x	X	x				

Species	Occurrence	Fields	Shrubland	Young Forests	Deciduous Forest	Conifer Forest	Ponds	Swamps	Cattail Wetlands	Wet Meadow
Hairy woodpecker	Probable breeding				X	x				
Northern flicker	Probable breeding	X		x	X	x				
Pileated woodpecker	Possible breeding				X	X				
Eastern wood pewee	Probable breeding			X	X	X				
Alder flycatcher	Probable breeding		x					X		
Willow flycatcher	Possible breeding		X							
Least flycatcher	Probable breeding			X	X	x				
Eastern phoebe	Probable breeding	X			X	X		X		
Great Crested flycatcher	Probable breeding				X	X				
Eastern kingbird	Confirmed breeding	X	x				X			
Tree swallow	Possible breeding	X	X		X		X	X	X	X
N. rough-winged swallow	Transient	X	X				X	X	X	X
Barn swallow	Probable breeding	X	X				X	X	X	X
Blue jay	Probable breeding			X	X	X				
American crow	Probable breeding	X	X		X	X				
Common raven	Possible breeding			x	X	X				
Black-capped chickadee	Probable breeding		x	X	X	X				
Red-breasted nuthatch	Possible breeding			x	x	X				
White-breasted nuthatch	Probable breeding			x	X	x				
Brown creeper	Possible breeding			X	X	X				
Winter wren	Confirmed breeding		x	x	X	X		x		
Golden-crowned kinglet	Probable breeding			X	x	X				
Ruby-crowned kinglet	Transient			X		X				
Eastern bluebird	Confirmed breeding	X	X			x		x		
Veery	Probable breeding		x	X	X	x		X		
Swainson's thrush	Transient			x	x	X				
Hermit thrush	Probable breeding		x	x	X	X		x		
Wood thrush	Probable breeding			x	X	X				
American robin	Probable breeding	X		X	X	X		x		
Gray catbird	Probable breeding	X	X	X	X	X				

Species	Occurrence	Fields	Shrubland	Young Forests	Deciduous Forest	Conifer Forest	Ponds	Swamps	Cattail Wetlands	Wet Meadow
Northern mockingbird	Possible breeding	X	X							
Brown thrasher	Probable breeding	X	X	x						
Cedar waxwing	Confirmed breeding	X	X	x	x	X	X	x		
European starling	Probable breeding	X		X	X	X				x
Solitary vireo	Probable breeding			x	x	X				
Warbling vireo	Possible breeding				X					
Red-eyed vireo	Probable breeding			X	X	X				
Blue-winged warbler	Probable breeding	X	X					x		
Yellow warbler	Probable breeding	X	X					x		
Chestnut-sided warbler	Probable breeding	X	X	x				x		
Magnolia warbler	Probable breeding			X		X				
Black-throated blue warbler	Probable breeding			x	X	x				
Yellow-rumped warbler	Possible breeding		X	X	X	X		x		
Black-throated green warbler	Confirmed breeding			X	X	X				
Blackburnian warbler	Probable breeding				X	X				
Blackpoll warbler	Possible breeding			x	x	X				
Black-and-white warbler	Probable breeding			X	X	X				
American redstart	Probable breeding			X	x	x				
Ovenbird	Confirmed breeding			X	X	x				
Louisiana waterthrush	Probable breeding					x		X		
Mourning warbler	Possible breeding	x	X	x				x		
Common yellowthroat	Probable breeding	X	X		X	x		X	x	X
Scarlet tanager	Probable breeding			x	X	x				
Northern cardinal	Probable breeding	X	X	X	X	X		X		
Rose-breasted grosbeak	Probable breeding		x	X	X	x				
Indigo bunting	Confirmed breeding	X	x	x						
Rufous-sided towhee	Probable breeding		X	X	X	x				
Chipping sparrow	Probable breeding	X		X						
Field sparrow	Possible breeding	X	X							
Savannah sparrow	Possible breeding	X							x	x

Species	Occurrence	Fields	Shrubland	Young Forests	Deciduous Forest	Conifer Forest	Ponds	Swamps	Cattail Wetlands	Wet Meadow
Song sparrow	Confirmed breeding	X	x		x	x		X	x	x
White-throated sparrow	Possible breeding	x	X	x	x	x				
Dark-eyed junco	Probable breeding	X	X	X	X	X				
Bobolink	Possible breeding	X								x
Red-winged blackbird	Probable breeding	x						x	X	x
Eastern meadowlark	Possible breeding	X								
Common grackle	Probable breeding	X		x	x	x		X	x	x
Brown-headed cowbird	Probable breeding	X	x	x	x	x			x	x
Northern Oriole	Probable breeding			X	X					
House finch	Probable breeding			X	X					
American goldfinch	Probable breeding	X	x	X	X	x		X	X	x
House sparrow	Probable breeding	X	x							

Appendix B

6

6

Integrated Pest Management (IPM) Plan
for
The Course at Mount Greylock
Adams, Massachusetts

Prepared by:
Corcoran Jennison Hospitality Company

With:
Hurdzan-Fry
Golf Course Architects

INTRODUCTION

Corcoran Jennison Hospitality Company (CJH) is a partner and the golf course manager at The Course at Mount Greylock. CJH is experienced in all phases of golf club development and is also recognized as New England's premier operator of high quality golf courses. CJH successfully developed and built Ocean Edge Resort & Golf Club on Cape Cod, a resort property located in an environmentally sensitive area adjacent to Cape Cod Bay. CJH opened Ocean Edge 14 years ago and has established the property as one of the most popular resort golf destinations in the Northeast. CJH has also managed other noted New England resort destinations including Cranwell Resort & Golf Club in Lenox, MA and Hawk Mountain Resort in Plymouth, VT. In addition, CJH's golf development and management portfolio has included Glen Ellen Country Club in Millis, MA, Widow's Walk Golf Course in Scituate, MA and Olde Scotland Links in Bridgewater, MA.

The firm of Hurdzan-Fry (HF) is the architect of The Course at Mount Greylock. CJH and Dr. Hurdzan represent the team that successfully designed, constructed, opened and operated Widow's Walk Golf Course. The CJH-HF team looks forward to building upon their success at Widow's Walk with The Course at Mount Greylock, while adhering to the same environmentally sound design and operating approaches. Some of the past successes at Widow's Walk include:

1) Designation as the first National Environmental Demonstration project, a designation from the Center for Resource Management, *Golf Digest* and the National Wildlife Foundation.
2) Awarded the National Environmental Leader in Golf Award from *Golf Digest.*
3) The CJH superintendent was awarded the GCSAA Environmental Steward *A*ward.
4) CJH worked in cooperation with the Massachusetts Audubon Society to develop and market a course guide and portions of the profits were donated to the Audubon Society.
5) Successfully began Audubon certification (a program all CJH courses participate in).
6) Recycled carpet, from local contractors, to build the walls of bunkers on the course.
7) Used locally recycled road asphalt as the parking lot and cart path material.
8) Documented an increase in biodiversity as a result of selected clearing, installation of bird and bat houses and an increase in favorable habitat.
9) Successfully used the fibrous outsides of coconut shells to minimize erosion.
10) Sewage sludge was used as a soil supplement to create topsoil.
11) Compost material from the adjacent landfill was used as fill material.
12) Widow's Walk was featured in the April 1997 edition of *Smithsonian* and July 1998 edition of *Audubon*, as an example of environmentally sound golf development.
13) Awarded the Best New Public Affordable Course Award by *Golf Digest.*

Dr. Hurdzan, who has his Ph.D. in environmental plant physiology, is considered to be the most environmentally sensitive architect in the country. Dr. Hurdzan's awards and qualifications are too extensive to list, but include:

1) Named Architect of the Year in 1997 by *Golf World*.
2) Received the President's Award for Environmental Leadership from the GCSAA.
3) Received the Distinguished Service Award from the GSCAA.
4) Named one of the top five architects by *Golf Digest*.
5) Author of "Golf Course Architecture: Design, Construction & Restoration" considered to be "required reading" within the industry. The royalties of the book are donated to a foundation for environmental research and turf grass scholarships.
6) Has successfully completed over 200 golf courses.

MANAGEMENT OVERVIEW

One of the criticisms of golf courses is the amount of water used to irrigate them. Indeed, many golf operators do over-water their golf courses in an effort to maintain a lush green golf course. We disagree with this approach not only because it is a waste of limited water resources, but also because it is not good for the golf course or the golfing experience. The Course at Mount Greylock has been designed as a course in which limited water, fertilizer, pesticides and herbicides will be used in its ongoing management.

The key to good and responsible management of a golf course is to have healthy turf that is as self-sufficient as possible. Lush thick turf often is not a turf that is healthy, but one that is on life support. Golf course turf must be capable of withstanding stress from weather, traffic, insects and disease. Turf grass that is over-watered will not develop the type of root structure that will enable the grass plant to naturally resist the stresses that golf course turf must endure.

The less capable the grass is to withstand these stresses naturally, the more the golf course manager will have to rely on external support. For example, a golf course that is over-watered will have shallow rooted turf grass. The grass will then require even more water during drought conditions because of the lack of adequate root development. Likewise, over-watered turf is a better breeding ground for turf grass diseases, thus requiring a higher chemical usage.

The key to using the proper amount of irrigation is the appropriate selection of grasses for the golf course. The turf grass selection for The Course at Mount Greylock has a higher than normal use of drought and disease resistant fescue grasses.

Another important element in developing healthy turf is having a good drainage system for the golf course. Irrigation should never be applied at a rate or amount that is more than can be utilized by the grasses being irrigated, but rainfall will sometimes deliver more than the grass plant and the soil can absorb. The establishment of a healthy turf grass root system is helpful in this regard. The deeper and stronger the root system, the more water the plant and surrounding soil can absorb and less drainage run-off there will be.

One of the important elements of the earthwork and shaping of the golf course is to allow the course to drain properly without persistent wet areas. The golf course drainage is intended to convey excess water from the main play areas (tees, fairways, bunkers and greens) to the more out of play areas of the golf course.

The golf course shaping and drainage is also intended to prevent direct surface run-off to wetlands and other sensitive areas. Golf course drainage is typically designed for a fairly low level of storm. A two-year storm is often used because any storm event greater than that would generally preclude golfers being on the golf course. By sizing the drainage for a low level storm, run-off from a higher-level storm is generally detained in the golf course itself. Every drainage basin can act as a temporary

detention basin. The water is ultimately discharged at a lower rate than, and over a longer period of time, than occurs naturally. Drainage discharges will be to non-treated native grass areas that will provide filtration before the ultimate drainage discharge.

The Course at Mount Greylock has been designed to be one that will play "firm and fast". This means that the irrigation will be used only to the extent that is necessary to keep the turf grass healthy. It is not desired to have a spongy, lush turf. The use of the fescue grasses will result in fairways that will behave like rolling links courses. The more open area, flatter area of the course, holes 2 thru 6, will even have a sort of Scottish feel with long, minimally maintained fescue and native grasses between the holes.

CONCEPT OF INTEGRATED PEST MANAGEMENT AND BEST MANAGEMENT PRACTICES

A properly designed and well-maintained golf course relies on a combination of cultural programs to ensure environmental quality and provide acceptable playing conditions. The primary cultural practices include mowing, fertilization and irrigation. Secondary cultural practices essential to quality turf, but used less frequently, include cultivation (vertical mowing and core aerification), top-dressing, rolling and other mechanical practices.

Pest management relies on the use of pesticides, however, using an Integrated Pest Management (IPM) approach, pesticide use is integrated within cultural practices to minimize chemical control of turf pathogens and pests. IPM is an ecologically based system that uses biological and chemical approaches to control potential and realized pathogens. IPM is a preventive approach incorporating a number of objectives including:

1) development of a healthy turf grass that can withstand pest pressure.
2) judicious and efficient use of chemicals.
3) establishment of disease thresholds to direct pesticides applications.
4) enhancement or introduction of populations of natural and/or beneficial organisms.
5) taking effective, appropriate action at an early or preventive stage often based on thresholds or indicator areas, resulting in the reduction of pesticide usage.

These five objectives are met through the seven components of a successful IMP Program. The components are:

1) Monitoring
2) Regulatory
3) Genetic
4) Cultural
5) Physical
6) Biological
7) Chemical

This document will reference these components in each appropriate section.

IPM strategies will be incorporated into every aspect of The Course at Mount Greylock's golf course operation so they are part of the daily routine of the maintenance personnel. This whole maintenance approach will include the following:

- Selection of the best-adapted turf grass species and cultivars for this site. The Course at Mount Greylock has selected appropriate quality species and cultivars for the grow-in phase of the golf course, which are suitable for the New England climate. Flexibility will be used in the future, should a

particular cultivar or species be prone to disease or perform poorly in the particular environment in North Adams, MA. Any potential over-seeding will take into account past performance and maintenance requirements of the turf grass.

- The use of proven cultural practices such as aerification to reduce compaction, vertical mowing to reduce excessive thatch build-up, top-dressing to provide a high quality putting surface, maintenance of proper soil nutrient levels to best determine the fertility requirements of the turf grass, sound irrigation management, and proper mowing techniques to minimize disease potential and produce a high quality playing surface.

- A judicious pesticide management program to control those pests and pathogens that exceed a predetermined tolerance level for acceptable turf growth and quality.

- The continued monitoring of the turf for conditions that may precede pest problems and observations for critical changes in pest and beneficial organism populations.

The objective of this IPM plan is to develop low risk fertilizer, irrigation and pesticide programs that will minimize potential impact to the surrounding environment. An essential aspect of any IPM program is that these programs are administered on a day-to-day basis by a golf course superintendent sensitive to environmental concerns of the property and well experienced in golf course maintenance. Corcoran Jennison Hospitality (CJH) will place such a qualified and certified superintendent at the course during its construction.

The potential for leaching of fertilizer material is directly related to the amount of leachable material present, the amount of water moving through the soil and the management of cultural inputs into the soil-plant-water system. Several scientific studies have documented that efficiency in rate and timing of fertilizer applications and irrigation, utilized within the concept of Best Management Practices (BMP) will minimize the potential for problems of both groundwater contamination by leaching and surface water contamination by runoff.

With pesticides, several factors are involved in making a particular site vulnerable to groundwater contamination. The pesticide itself must be considered as to its solubility, absorption, and persistence within the soil. Also, the soils themselves must be considered. For example, sandy soils and soils which are low in organic matter are most vulnerable to the potential for problems. Additionally, the site itself must also be considered. If the property has a very shallow soil profile, a high water table, and/or is in a very wet climate, or extensive irrigation is practiced, the site is more vulnerable to contamination. These criteria will be used to establish the Best Management Practices for The Course at Mount Greylock to insure confidence in the management of the property to minimize environmental impact through an ongoing IPM plan.

The use of BMPs can minimize the potential movement of nutrients and pesticides that could negatively affect water quality if allowed to enter ponds or groundwater in an uncontrolled manner or in significant amounts. The use of BMPs to protect water quality can be affordable, easily implemented and effective pollution control practices.

The goals of BMPs include:

1) the reduction of offsite movement of sediments, nutrients and pesticides.
2) to control the rate, method and type of chemical being applied.
3) to reduce chemical usage by implementing IPM, pest thresholds, alternate pest control options and fertility testing.
4) to use both biological and mechanical soil and water conservation practices.
5) to educate managers and the public on the relationship of environmental issues and golf course management.

IPM AND BMPS SPECIFIC TO THE COURSE AT MOUNT GREYLOCK

Subsurface Drainage
The use of catchment areas to hold and slowly release runoff allows the mature turf to filter any potential loss of nutrients and pesticides from the golf course. These areas also serve as a buffer to protect environmentally sensitive wetlands and surface water features at the property.

Many of the fairways at The Course at Mount Greylock will be constructed with a concave layout. As a result, the middle of the fairway is lower than the surrounding edges in many areas of the golf course; this will help to contain any materials applied to the turf and minimize potential runoff to adjacent surface water or wetlands. The design encourages water flow toward the middle of the fairway where the turf growth and density will be at its maximum. This is a very effective design to reduce any potential runoff due to heavy rains or excessive irrigation.

Critical Area Planting
Critical areas refer to specific sites on the property that have a high potential for soil erosion based on topography and/or existing vegetative cover. It is essential to plant appropriate vegetation to stabilize the soil and reduce erosion and runoff identified in critical areas of the property.

There are a number of areas at The Course at Mount Greylock that can benefit from the planting and establishment of native grasses to reduce erosion and potential runoff. Various commercial seed companies sell mixtures that would be appropriate for this site. As outlined on the "Grassing Selections Table" we will be utilizing a mixture of Little Bluestem, Indiangrass, Azure Blue Sheep Fescue, Reliant Hard Fescue and Jamestown II Chewings Fescue. General seeding rates will be 80 pounds per acre.

Resistant Crop Varieties
Use of plant varieties that are resistant to insects, nematodes, diseases, etc., reduce pesticide and fertilizer use. Care should be taken in the selection of the turfgrass species and cultivars best adapted for the soil and climate conditions of the site.

Proper selection of turf species is an important component of an integrated pest management program. When turf species are planted in areas where they are not well adapted, they require greater care to grow and maintain and are more susceptible to invasion by pests.

There are several different grass zones on a golf course. It is important to establish appropriate grass cultivars for each area depending on the intended use and the maintenance level. When agronomic ally appropriate, the turf grass selection will resist the stress due to temperature, drought, disease and pests. The selection will allow the turf grass to recover from damage while minimizing the corrective efforts needed.

The factors in deciding the appropriate turf grass selections for The Course at Mount Greylock are:

- Climatological conditions for the region
- Soil conditions of the site
- Drought tolerance
- Resistance to disease and insects (thus lowering chemical demand)
- Suitability for establishment on the site
- Compatibility with adjoining grasslands and woodlands
- Resistance to annual grasses and weeds
- Tolerance and recovery to winter conditions
- Quality of irrigation water
- Desirability for golf playing situation
- Availability of certified seed, clean of harmful pests and nuisance seed in accordance with good turf growing practices

The major species used for turf grass are outlined below:

BENTGRASS (Agrostis spp.): Two species of bentgrass commonly used for turf are colonial and creeping bentgrasses. Colonial bentgrass is best adapted to the coastal region where it is used for general lawn areas. It is a fine-textured grass with upright leaves and dense growth. Colonial bentgrass grows best in cool, humid weather, and can tolerate some shade; it has low tolerance to heat, salinity water stress, and traffic. Colonial bentgrass requires frequent irrigation because it has a shallow root system. It tends to be susceptible to a wide range of diseases.

Creeping bentgrass is a specialty grass used for golf course putting greens, lawn bowling greens and lawn tennis facilities. It is capable of withstanding very low cutting heights. Creeping bentgrass is a very fine-textured grass with flat, narrow leaves, a bright green color, and a shallow root system. It requires a high level of nitrogen fertilization and needs to be irrigated fairly frequently because of its shallow roots.

KENTUCKY BLUEGRASS (Poa pratensis): Kentucky bluegrass produces a dense turf with dark green, medium-textured leaves; it spreads by rhizomes. It comprises most of the turf areas in the cool temperate zones of the U.S. Kentucky bluegrass grows best in fall, winter and spring when temperatures are cool; during summer its growth slows. Kentucky bluegrass likes sun and is somewhat shade tolerant, but not drought tolerant. Kentucky bluegrass requires frequent irrigation during the summer months because of its shallow root system.

RYEGRASS (Lolium spp.): The species of ryegrass used for turf grass are annual and perennial ryegrass. Annual ryegrass is well adapted to sunny conditions and survives well during the cooler months. Annual ryegrass has

low heat tolerance, is coarse textured, and shiny dark green. It dies in late spring to early summer.

Perennial ryegrass is well adapted to sunny or partially shady conditions. It grows best during periods of cool temperatures and is very competitive, rapidly establishing a uniform green cover. Fall seeding is preferred. Perennial ryegrass has a bunchgrass-type growth habit, thus open areas should be reseeded. It is extremely vigorous in its growth, particularly in the seeding stage, thus minimizing weed invasion. Selection of new, improved perennial ryegrass cultivars will decrease invasion of weeds compared to the older pasture-type cultivars such as Linn perennial ryegrass.

KENTUCKY BLUEGRASS AND PERENNIAL RYEGRASS MIX: For general lawns, mixing Kentucky bluegrass and perennial ryegrass is preferred over planting either species singly. The mixture results in a more disease-resistant turf grass stand offering good color and year round growth. By weight, at least 15 percent perennial ryegrass seed is recommended in the mixture.

TALL FESCUE (Festuca arundinacea): Tall fescue is well adapted to sunny or partially shady conditions. It is coarse-textured, although newer cultivars are finer textured, but not as fine as perennial ryegrass. Tall fescue has good disease resistance and excellent tolerance to heat and drought stress. Unlike Kentucky bluegrass, all fescue is a bunch-type grass, thus open areas need to be reseeded. The extremely vigorous growth of tall fescue is a deterrent to weed invasion. Selection of new, improved turf-type tall fescue cultivars can improve the competitiveness of the turf over the older pasture-type tall fescue cultivars.

FINE FESCUE (Festuca rubra commutata): Fine fescue is a fine-textured, cool season turf grass that can have either a clumped or creeping type of growth. Fine fescue makes a dense, wear resistant turf when well established. It is usually mixed with other turf species because it tolerates shade well, thus it will fill in shady areas. It is often mowed at 1 to 1.5 inches to tolerate heat. Fine fescues do not like excessive nitrogen.

FESCUE, CHEWINGS (Festuca rubra commutata): Cool-season bunch grass that is fine-leaved and offers shade tolerance. Mostly utilized as turf. Likes well drained soils and is more drought resistant than bluegrass. Slower growth habit makes for good low-maintenance area. Can be used in mixtures without becoming aggressive.

FESCUE, CREEPING RED (Festuca rubra): Cool-season, sod-forming grass similar to Chewings fescue, but spreads by underground rhizomes. Likes shade in the cooler climate of the central and northern U.S.

FESCUE, HARD (Festuca longifolia): A cool-season bunch grass that has some shade tolerance. This perennial is considered a fine fescue and grows

shorter then tall fescue. Used in shade mixes and as a cover crop for native grasses and forbs. Likes good soil in central and northern latitudes. More drought tolerant than sod-forming cool-season grasses. Works well in erosion control mixtures.

FESCUE, SHEEP (Festuca ovina): A cool-season native grass that adapts to central and northern latitudes of the U.S. A bunchgrass that produces a blue-green colored leaf. Likes moist soils and does especially well in sandy or gravel soil types. Good for erosion control.

INDIANGRASS (Sorghastrum nutans): This tall native species waves its golden, plume-like head in September, making it one of the most beautiful of the grasses. Adapted to a wide range of soils, this grass thrives on well-drained bottomland, but does well on sandy soils, also. It is one of the most important of the tall grasses for its nutritious and palatable qualities for wild life. Very good habitat grass and its attractive heads make an excellent choice for landscape use. Reddish-yellow in winter.

BLUESTEM, LITTLE (Schizachyrium scoparium): This fine-leaved, bunch-type grass is native to 45 of the 50 states, making it the most abundant of all native grasses. Grows well on either uplands or lowlands. New shoots have flat, bluish-colored basal leaves, which tend to fold along the mid rib. Its russet-red color in fall and winter make it desirable for landscaping and also for nesting areas of upland game birds.

SWITCHGRASS (Panicum virgatum): Winter-hardy and drought-resistant grass, prefers lower, moist sites, but will grow under a wide range of climatic conditions and soils, including sand. Delicate wispy effect created by its large, open head with small seeds resting at the ends of long, slender seed stems. Leaf sheath rounded, with red-to-purple color at base. Used extensively for soil conservation. Works well on erodible sites. Has a red cast in fall and turns orange-yellow in winter.

Based on all of the aforementioned goals and criteria, the turf grass selections for The Course at Mount Greylock are as follows:

GRASSING SELECTIONS

Greens	Penn A-2 Creeping Bentgrass Seed rate: 1.25 lbs. / 1,000 sq.ft.
Tees	Penncross Creeping Bentgrass Seed rate: 1.25 lbs. / 1,000 sq. ft.
Fairways	PennTrio Creeping Bentgrass Seed rate: 35 lbs. / acre **And** 40% Tiffany Chewings Fescue 20% Shadow Chewings Fescue 20% Shademaster II Creeping Red Fescue 20% Seabreeze Slender Creeping Red Fescue Seed rate: 250 lbs. / acre
Near Rough	10% Challenger Kentucky Bluegrass 25% Wildwood Kentucky Bluegrass 25% Defiant Hard Fescue 15% Shadow E Chewings Fescue 15% Shademaster Creeping Red Fescue 10% Advantage Perennial Ryegrass Seed rate: 250 lbs. / acre
Outer Rough	30% Big Horn Sheeps Fescue 30% Discovery Hard Fescue 20% Tiffany Chewings Fescue 20% Shademaster II Creeping Red Fescue Seed rate: 300 lbs. / acre
Non-Play / Native Areas	50% Little Bluestem 15% Indiangrass 15% Reliant Hard Fescue 10% Azure Blue Sheep Fescue 10% Jamestown II Chewings Fescue Seed rate: 80 lbs. / acre

NOTE: All fescue and bluegrass seed to have high endophytes

As mentioned earlier, there are specific zones on a golf course. The following provides a more detailed explanation of the zones and their specific grassing selections:

GREENS (Total area = 2.8 Acres)
The greens have the highest demand on the quality of turf grass. The greens will typically be mowed daily at a height of 3/16" or less. The mowing height and quality of the turf dictate the use of a creeping bentgrass. Penncross creeping bentgrass has probably been the most commonly used putting green grass throughout Massachusetts. The higher level of thatch production in Penncross, and resulting increased maintenance requirement, leads to selecting the newer PennA-2 cultivar. The newer upright cultivars of bentgrass are less susceptible to disease, insects and mites and provide putting surfaces that are resistant to weeds and weed seed establishment. These grasses limit cultivar segregation and annual bluegrass intrusion, have a reputation of adapting to a wide range of soil profiles, and provide upright turf with excellent color, texture, wear and recuperative characteristics.

TEES (Total area, including practice tee = 3.7 Acres)
As discussed it he above section, Penncross creeping bentgrass is probably the most used bentgrass throughout Massachusetts. The drawback for use on the greens, high thatch production, is a positive for use on the tee surfaces. The turf grass on the tees has to withstand the highest wear stress of any area of the golf course. The higher thatch production of the Penncross is well suited to withstand the wear while having the advantages of a low cutting height (1/4" to 3/8") and rapid recoverability.

FAIRWAYS (Total area, including practice area = 36.1 Acres)
The standard for high caliber golf courses in New England is for fairways to be seeded with creeping bentgrass. The bentgrass does have a relatively high nitrogen fertilization need and needs to be irrigated frequently. By blending fescue with the bentgrass, the water and nitrogen demand can be lowered as the fescue grasses are much more drought tolerant and also more disease tolerant. Fescue grass, however, is not wear resistant (particularly in regard to golf carts) and does not repair itself as quickly as the bentgrass. By blending the bentgrasses with the fescue, a high quality-playing surface can be established, but with much better drought and disease tolerance and a lower fertilizer demand than the bentgrass fairways on other top level golf courses.

NEAR ROUGH (Total area = 40.5 Acres)
The near rough is defined as the area immediately surrounding the fairway and the greens and tee surfaces. The near rough will be approximately 10-15 yards wide and is characterized by receiving some irrigation but less than is received by the fairways. The standard rough mix is Kentucky bluegrass and perennial ryegrass. This mix provides a wonderful look to the golf course, but the bluegrass is not drought tolerant, requiring frequent irrigation. For the Greylock Golf Course, fescue grass has been added to the seed mix (55%) to provide greater drought and disease tolerance. For the protection of the tee,

green, and bunker edges; for silt control around catch basins; and for the stabilization of steeper slops approximately half of this area will be sodded.

OUTER ROUGH (Total area = 14.6 Acres)
The outer rough is that area that will still be in play for golfers, but beyond the reach of any effective irrigation. For that reason an all rescue mix, which is highly drought tolerant, is recommended. This grass mix can also be maintained at a variety of heights depending on play needs. This mix will do well in both sun and shade, so is a good transition mix to both the grasslands and woodlands surrounding the course.

NON-PLAY/NATIVE AREAS (Total area – 12.5 Acres)
This mix is for reclaiming areas currently disturbed, or disturbed in the construction of the golf course, that are not considered play areas. Once established, these areas will not receive irrigation or maintenance.

Only certified seed will be used at The Course at Mount Greylock, both in the grow-in phase and in the repair of mature areas that will need over-seeding. All sod used at the property will also be certified. Certified seed will be used, not only for the tee, fairway and greens mixtures, but also for all out of play or naturalized areas that will be seeded. Certified materials will also be used for any planting stock on the property. The use of certified seed will reduce the potential of weed and disease contamination through seeding and is a **regulatory** component of the IPM plan.

The selected grasses for The Course at Mount Greylock are expected to perform well in the New England climate and which have shown a resistance to potential pest problems. Should the selected cultivars prove susceptible to particular pathogens or require excessive maintenance to maintain a quality-playing surface, flexibility will be shown in the selection of grasses for over-seeding. The superintendent will have critical input in the decision as to the performance of the selected cultivars and species of turf, on an ongoing basis. The capability to select the proper **genetic** material is another component of a successful IPM plan.

Weed Management
A dense, vigorously growing, competitive stand of turf grass will resist invasion by weeds. Integrated weed management focuses on establishing and maintaining a competitive stand of turf. While it is difficult to eliminate all weeds from turf, in highly maintained turf it is possible to prevent large irregular patches of weeds, which make turf unattractive and reduce its utility.

The objective of an integrated weed management program is to keep weed populations below levels that are incompatible with the purpose of the turf. The first step is preparing the site properly and choosing an appropriate turf grass species for the location, followed by cultural practices that contribute to turf vigor, such as proper irrigation, mowing, fertilization, thatch removal and aeration. The increased vigor allows turf to better withstand insect, disease, and nematode damage and to recover more quickly. Healthy turf can also out-compete weeds and reduce the chances of their becoming established. Herbicides are used as tools in turf management where high

quality turf is required; however, their use will be integrated with a good cultural program.

Turf Establishment

Before planting, annual weeds can be controlled by irrigating to allow germination, followed by cultivation or application of a contact herbicide. Repeating this process two or three times will improve the chances of establishing a turf grass with a minimum of weeds. Using turf grass sod in well-prepared soil that has been cultivated and amended to improve water-holding capacity in sandy soil or to improve drainage in clay soils will decrease annual weeds. Soil that is wet for long periods of time, often as a result of poor drainage, favors some weeds such as red sorrel, curly dock, nutsedge, and annual bluegrass.

Populations of some perennial weeds such as dallisgrass, Bermuda grass, and purple nutsedge can be reduced before planting turf by cultivating in summer and keeping the soil completely dry to dehydrate the propagules (stems, rhizomes, tubers). Rework the soil to bring up new propagules, but be sure to keep the soil dry; three to four cultivations may be needed for best results.

Selecting a Turf Grass

Turf species and cultivars vary in their adaptability to different areas. Choosing a well-adapted cultivar to plant will be one of the most important weed management decisions. When turf species are planted in areas where they are not well adapted, they require greater care (e.g. management skills and resources) to grow and maintain and are more susceptible to invasion by weeds. Irrigation, mowing, and fertilization requirements vary for each turf species and must be carefully followed to maintain their competitive edge against weed invasions.

Managing Established Turf

Turf grass can be established and maintained to discourage weeds in the turf or to decrease chances for weed invasion. Any condition that exposes the soil surface to additional light allows weeds to invade. Weed problems are often the result of over watering or under watering, mowing too low or too high, low fertility, excessive wear, disease or insect damage, soil compaction, and excessive shading.

Irrigation Management

Irrigation is needed, therefore, for both cool and warm season turf grasses. It is very important to follow good irrigation practices, regardless of turf grass species used, so that optimum growth and development of turf grass is obtained. A rapidly growing, competitive turf grass sward resists weed invasion.

A uniform application of water is extremely important for maximum efficiency because it is important to avoid wet and dry spots within the sward. (Proper timing and an adequate amount of irrigation are necessary for optimum growth, maximum quality, and best appearance of the respective turf species.) Turf is weakened in wet spots because of poor soil aeration and root disease that can result in the invasion of shallow-rooted weeds such as crabgrass, annual bluegrass, and oxalis. Also, runoff from over irrigated areas is wasteful and results in accumulation of water in low parts of the

sward. In contrast, dry sites will be characterized by turf of poor color, density, and uniformity that allows the invasion of deep-rooted weeds such as dandelions, plantains, clover, knotweed, and yarrow.

Key points for maximum irrigation efficiency:

- Irrigate deeply, but infrequently.
- Irrigate late at night or early in the morning. At these time water loss from evaporation is minimal and distribution is usually good because of good water pressure and limited wind.
- Avoid runoff by matching water application rates to soil infiltration rates (the rate water enters the soil).
- Use less water in shaded areas than in open sun.
- Remove thatch in spring if it is more than 0.5 inch thick.
- Do not over fertilize; fertilize moderately according to the individual species and location.

Fertilization

Proper fertilization of turf grass is an important component in producing vigorous, dense growth. Low fertility, especially low nitrogen, is one of the factors that allow weeds to invade turf. Nitrogen should be applied monthly during the year when the turf is actively growing using the following guidelines:

Turf Area	Nitrogen (lb/1000 sq ft/yr)
Greens	4-6
Tees	2-4
Fairways	2-3
Near Rough	1 ½-2
Outer Rough	¾-1
Non-Play/Native	O

Fertilizer Applications at The Course at Mount Greylock

In general, the golf course will be fertilized to the minimum level required to maintain a healthy turf grass system. A majority of the annual fertilizer will be applied during the late spring and early summer months. Conversely, there are times when fertilizer will not be applied. For example, late fall applications of fertilizer sometimes referred to as "dormant feeds" will be avoided. The turf grass is not actively growing and the turf plant cannot efficiently absorb excess nutrient applications. Additionally, late fall applications of nitrogen have been shown to increase the potential of pink snow mold and the potential of nitrate leaching. Excessive summer applications of nitrogen will increase the potential of fungal disease such as pythium and brown patch. Fertilizer will be applied lightly and evenly to ensure the material is fully absorbed by the turf grass.

A slow release balanced fertilizer will be used to maximize the protection of ground and surface water. Buffer zones of a least 25 feet will be established around surface water, whenever possible. In these areas, fertilizer will not be applied. Native vegetation will be encouraged, along with appropriate low maintenance turf grass

species within the buffered areas. These buffered areas will further serve to protect surface water features from potential runoff. Every precaution will be made not to apply fertilizer before a major rain event. Long-range weather forecasts will be analyzed before the decision to apply fertilizer is finalized. Fertility is a critical factor in the BMPs of golf course maintenance and will be supervised by a certified golf course superintendent.

Fertilizer applied judiciously over time will provide high quality turf grass while eliminating potential non-point source contamination. An important step in determining a sound plant nutrition program is to have the soil analyzed to determine pH, and availability of calcium, magnesium, phosphorus and potassium as well as the micro-nutrients manganese, zinc and copper. In addition to the soil tests, CJH will have representative tissue samples analyzed to correlate with soil analysis that will determine the efficacy, or the rate at which applied materials are incorporated into the turf plant. From this information, a valid fertility program will be developed with the assurance that excess nutrients will not be applied.

Nitrogen is the nutrient used by turf grass in the largest quantities. Its function is to stimulate vegetative growth and maintain acceptable color standards. A qualified superintendent will determine nitrogen fertilizer requirements based on color, density and rate of growth (clipping yields) of the turf grass. Equally important in the decision process will be the soil analysis combined with the nitrogen tissue analysis. Interpretation of soil nitrogen analyses to determine the exact amount of nitrogen available to the plant is extremely difficult. For this reason, nitrogen rates will be adjusted, but not solely based on soil testing. Leaching of nitrate-nitrogen can be safely regulated by making judicious applications of controlled released materials, supplemented by fertigation or water-soluble applications of nitrogen.

Applications of controlled release granular materials will be made by using walk behind spreaders for the greens and tees and by using a throw spreader for the fairways. Water-soluble fertilizers will be applied using a boom sprayer. Controlled-release organic materials such as Milortganite, isobutylidene diurea(IBDU), urea-formaldehyde (UF), methylene urea and coated products such as sulfur coated urea (SCU), and Polyon will be used as fertilizer products. These products have the advantage of supplying a longer, more uniform source of nitrogen, have a lower salt index and reduce the potential for nitrate leaching. By combining water-soluble nitrogen sources with the controlled release nitrogen products, availability can be extended to the plant without fear of nitrogen loss through surface runoff or leaching. When these products are used in conjunction with the appropriate tissue and soil analyses, informed decisions can be made as to the efficacy of the grass plant to absorb the applied material during particular environmental conditions.

Fertilizer Strategies for The Course at Mount Greylock

- Applying the majority of annual fertilizer during the late spring and early summer months, depending upon local weather conditions.

- Avoiding late fall or "dormant feed" applications of fertilizer.

- Native vegetation will be encouraged in the established buffer zones. Where native vegetation is not appropriate, turf grass will be maintained to a height of at least 2 inches to provide a buffer zone.

- Fertilizer will not be applied immediately before a major rain event (natural rain of more than a ¼ inch).

- Soil analysis will be performed at least once yearly, or as needed, to determine appropriate fertilizer needs.

- Representative tissue analysis will be correlated with soil analysis to determine the nutrient requirements of the turf grass.

- The golf course superintendent will assess the turf grass daily to determine fertility requirements based on:
    - color of turf grass
    - density of turf grass
    - rate of growth (clipping yields during mowing)

- Controlled-release granular materials will be used such as:
    - Milorganite
    - Isobutylidene diruea (IBDU)
    - Urea-formaldehyde (UF, methylene ureas)
    - Sulfur coated urea (SCU)
    - Polyon

- Controlled-release granular materials will be supplemented with water-soluble products. Application of granular products will be with a walk behind or throw spreader. Water-soluble products will be applied with a boom sprayer.

- All applications will be supervised and directed by the superintendent or the assistant superintendent.

Mowing

Correct mowing height and frequency of mowing is critical for preventing weed invasion. Different turf species have different mowing height requirements. Mowing Kentucky bluegrass too short (shorter than 1.5 inches) weakens the turf and encourages weed growth. Conversely, mowing Bermuda grass too long (longer than 1 to 2 inches) results in a buildup of thatch, which reduces the competitive ability of the grass.

Turf will be mowed so that no more than one-third of the leaf blade is taken off at each cutting. In the summer months, cool season turf grasses (Kentucky bluegrass, perennial ryegrass, fine fescue, tall fescue and colonial bentgrass) may be mowed at the higher height.

Unless mowed frequently, weedy turf areas will develop a patchy appearance in just a few days because of uneven growth. Common weeds that require frequently mowing to prevent patchiness are annual bluegrass and annual ryegrass in winter and crabgrass, dallisgrass, and buckhorn plantain in summer.

Physical

It is essential that the maintenance equipment be properly cleaned after use to prevent the spread of weeds from infected areas. Generally, a wash down with a water hose should be sufficient to prepare the machine for its next task. If an area shows signs (mycelium or fungal hyphae) or symptoms (leaf spots, discoloration, etc.), the greens mower will be cleaned immediately after use. This will reduce the spread of disease from one putting green to another. An area at the maintenance building will be designated as the "wash down area." This will be the only area where equipment is cleaned. Proper maintenance of the equipment will reduce the potential for disease development on the golf course.

Thatch Removal and Aeration

Thatch develops in turf when surface organic matter is developed faster than organic matter is decomposed. Creeping species, such as bentgrass, can produce a thick thatch. Removing thatch increases the turf vigor; it also reduces scalping by the mower and gives a more uniform appearance to the turf. Thatch can reduce the effectiveness of preemergence herbicides by either (1) binding with the herbicides, making them ineffective or (2) increasing degradation of the herbicides due to the increased activity of microorganisms.

Thatch removal (by verticutting) will be done before preemergence herbicides are applied; otherwise the herbicide will be removed or its activity will be decreased. The same principle applies to aeration. Herbicides will be applied after aeration to get maximum control of the weeds.

Monitoring

Regular weed surveys (winter, spring, and summer) will help determine what species are present, their approximate population levels, and what types of management practices may be necessary.

The superintendent will use a form such as the following one to keep written records of monitoring results. A written weed history will aid in making future weed management decisions.

A well-trained and experienced golf course superintendent will scout to detect symptoms and signs of pest problems on a daily basis. The superintendent will closely observe each area of the property for the presence of pathogens or stressed and disease susceptible turf, particularly since The Course at Mount Greylock will be a new course. As the course matures, certain areas will be identified as "indicator" areas. These areas will generally develop disease before other areas on the property. In this way, effective monitoring will identify potential pests and determine an integrated plan of action by observing the disease symptoms in the "indicator" areas. This approach coupled with site specific history, consulting with other superintendents, and consultations with

specialists in turf grass management, will produce an effective monitoring program. While economic advantages of IPM are marginal, the sociological and environmental consequences of judicious pesticide use are strong justification for implementation.

WEED SURVEY FORM

ANNUAL SPECIES

( ) annual bluegrass	( ) large crabgrass	( ) smooth crabgrass
( ) goosegrass	( ) common chickweed	( ) prostrate spurge
( ) knotweed	( ) malva	( ) wild barley
( ) burclover	( ) black medic	( ) spurweed
( ) _____	( ) _____	( ) _____

PERENNIAL SPECIES

( ) dandelion	( ) broadleaf plantain	( ) Bermuda grass
( ) oxalis	( ) dallisgrass	( ) white clover
( ) English daisy	( ) kikuyugrass	( ) yellow nutsedge
( ) _____	( ) _____	( ) _____
( ) _____	( ) _____	( ) _____

( ) Check for frequency of occurrence; L = low, M = medium, H = high frequency.

Herbicides

Herbicides are an effective tool where high quality turf is desired. However, they must be applied with care and accuracy and in the context of a good overall turf management program. Before using any herbicide, the label will be carefully reviewed for conditions of use including rates, methods of application, and precautions. Herbicides will not be used in any manner contrary to its label.

When using any herbicide for the first time, the product will be applied at the recommended rate on a limited area to make sure it is successful under local conditions. Excessive rates, improper timing, or application errors of selective, herbicides can injure or kill desirable turf. Insufficient application, on the other hand, usually results in failure or incomplete weed control.

Adjuvants are compounds that modify a spray solution. These include wetting agents, surfactants, spreaders, emulsifiers, and solvents. Adjuvants an enhance herbicide activity and/or reduce herbicide selectivity. Some adjuvants alone can cause injury to turf. Adjuvants should only be used when called for by the product label. The superintendent will consistently be aware of formulation changes for the herbicide; new formulations may result in turf injury even though no injury was noted in previous formulations.

Both broadcast and spot treatment of herbicides can be made. The extent of the weed infestation will determine which application method will be used. Broadcast applications can be made either by spraying herbicides mixed in water or by applying herbicides fixed to granules. Small-scattered infestations can be controlled with spot

applications. Larger more uniform infestations will be controlled with broadcast applications. To increase the uniformity of granular applications, one-half of the required herbicide may be applied over the entire area to be treated in one direction (north-to-south) and the other half may be applied over the entire area in the perpendicular direction (east-to-west). Before any broadcast spray applications, the sprayer will be carefully calibrated to insure accuracy.

Spot treatment with selective herbicides is useful in small areas. The recommended rate and concentration will consistently be applied. The superintendent will be careful not to prolong application over individual spots as over application can occur and result in turf injury to the surrounding area. Spot treatments are also useful with nonselective herbicides such as glyphosate, used to control individual clumps of weeds such as tall fescue, dallisgrass, or nutsedge. When applying the herbicide, just enough spray will be applied to wet the leaves of the weed. The superintendent will take extra precaution to insure that the application equipment is not be allowed to drip or leak between spot applications and that individuals do not walk through the treated area onto untreated turf. Both activities can cause severe turf injury. If the weed is taller than the turf, the herbicide can be applied with a wiper, giving a selective application to the weed.

Biological Control of Pests

Use of natural enemies of introduced antagonists can be an integral part of an effective IPM program to reduce the use of pesticides. While the biological controls which provide effective pest management for turfgrass are limited, whenever practical, these will be included in the program.

A biocontrol product that has proven useful in university trials includes BioTrek. BioTrek is a formulation of the fungus *Triochoderma harzianum* that has the potential to control dollar spot.

Pesticide Selection

When necessary, pesticides will be used to reduce pathogen pressure and maintain quality turfgrass. Pesticides will be selected which are less toxic, less persistent, less water soluble and less volatile whenever feasible. All pesticides selected for use at The Course at Mount Greylock will be screened for their potential to be sources of nonpoint pollution. Only materials that have a reasonable margin of safety will be included on the recommended list. Appendix I includes a list of pesticide properties that will be used to evaluate appropriate products for use at The Course at Mount Greylock.

Correct Application of Pesticides

Pesticides will be applied when environmental conditions for drift are minimal. No pesticides will be applied on high wind days. Also, applications will be avoided when heavy rain is forecast. Certain pesticide label instructions require irrigation with appropriate volumes of water or may suggest using wetting agents or surfactants. The certified pesticide applicator will closely follow label directions concerning application rate, irrigation water and appropriate adjuvants. All equipment connected with pesticide application will be precisely calibrated and in excellent working order. Any

and all required maintenance to the spray equipment will be noted and immediately corrected. The golf course superintendent will supervise pesticide applications.

It is intended that all spray equipment will be fitted with pesticide "skirts" to minimize drift. Additionally, whenever possible, pesticides will only be applied in the early morning hours on days with wind speeds of less than 5 mph.

Cultural

It is the responsibility of the superintendent to develop a detailed plan for the implementation of primary and secondary cultural practices which will maintain the turf in the most healthy condition, which will influence its susceptibly and recovery from pest problems. A detailed description of golf course cultural practices based on the described BMPs and a basic annual maintenance guides will be developed by the superintendent based on the first year's operation.

Biological

Biological control is the integrated application of antagonistic organisms coupled with the conservation and enhancement of natural enemy habitats within the golf course property. Effective biocontrol illustrates the IPM concept of maintaining the golf course as a complete integrated ecosystem. Where possible, biological control products will be incorporated in the pest management at The Course at Mount Greylock.

There are several species of entomopathogenic or "insect eating" nematodes which have shown success in previous field studies against surface feeding insects such as sod webworms and cutworms. One commercially available product is a formulation of *Steinernema carpocapsae* sold as Exhibit, Biosafe, BioVector and Orthoganic.

A neem tree extract, Azadirachtin, has been found to repel several kinds of insects and often causes them to stop feeding. Success with this product has been seen with surface feeding pests, such as sod webworms and cutworms. Commercial formulations include Margosan-O, Turplex and Bioneem.

By limiting the number of broad-spectrum insecticide applications, natural enemies of pests should be encouraged. Pathogens or noxious insects should be identified and appropriate material selected for application specific to the identified pest.

Ladybugs, dragonflies and spiders all prey on noxious, pest insects. These and other natural predators will be conserved and encouraged wherever their habitat is identified. Specific plant species to be conserved will be decided upon on an individual basis. Attractive aquatic submerged plants include lilies, pickerelweed and various grasses.

By encouraging nesting birds such as tree swallows, bluebirds and other insect eating species, noxious insects such as mosquitoes and gnats will be reduced.

Chemicals

Selective applications of fertilizer and pesticides based on information gathered from effective IPM have the potential to reduce chemical applications and maintain excellent playing conditions. Decisions to apply chemicals must be derived from the components of IPM. The following sections discuss pesticide and fertilizer selection and applications. Pesticide use is a necessary and beneficial approach to turfgrass pest problems. Chemical sprays can be restricted or reduced in many cases when used on a curative rather than preventive basis thus reducing environmental exposure. Pesticide selection at The Course at Mount Greylock will be based on effectiveness, toxicity to non-target species, solubility and persistence. Few pesticide applications will be made on a regularly scheduled basis. Exceptions may include pre-emergent herbicides for the control on annual weeds and fungicide used to control *Pythium* (pythium) and *Rhizoctonia solani* (brown patch). Pre-emergent herbicides are effective before the weed species emerges from the seed and are especially effective for the control of crab grass. Predicative models will be used for preventive fungicide applications for pythium and brown patch. All other pesticide applications will be initiated when symptoms or signs are observed in indicator areas or directly on the concerned area.

An effective monitoring program will ensure that disease and weeds are controlled before there is significant turf loss or a reduction in the quality of the playing surface. All materials applied to the property will be in strict accordance with the label instruction, at label rates, under appropriate environmental conditions (i.e. no forecast of wind or rain), and with a "skirted" low volume sprayer to reduce the possibility of drift.

Effective chemical management will also include a rotation of materials to reduce the development of resistant strains of pests. Resistant pests will require more frequent and/or higher rates of pesticide applications. While rotating materials, it is critical to know the active ingredient of the product formulation. Various products use the same active ingredient. Rotating products with the same active ingredient but different brand name will not reduce the potential for resistance development. The superintendent will rotate applications of different active ingredients in order to be the most effective in reducing the potential for disease resistance.

Conclusion

A golf course is a carefully maintained property whereby qualified superintendents strive to select the BMPs that provide the highest quality-playing surface while minimizing chemical inputs to achieve set goals. IPM at The Course at Mount Greylock will help to manage and view the property as a vibrant ecosystem very much connected to the ecology of Mount Greylock. With such a strong connection to the surrounding environment, a qualified superintendent will make informed and appropriate choices to best manage the golf course within the accepted IPM and BMPs outlined within this document. The development and implementation of a turf IPM plan utilizing BMP has been shown to virtually eliminate any potential contamination by pesticide/nitrate movement into groundwater or wetland areas when properly trained personnel follow established procedures. Research has shown that maiure turfgrass ecosystems have the ability to restrict, degrade and utilize most pesticides with far more efficacy than any other agricultural endeavor. These results are a reflection of the

relatively large and extensive root systems of mature turfgrass, yearly deposits of great quantities of organic matter to underlying soils and extremely active soil microbial population. IPM/BMP ensure that all possible methods are being applied to reduce and eliminate potential non-point source contamination.

Appendix I

Guidelines for Pesticide Selection at The Course at Mount Greylock

A review of specific studies that have investigated turf applications for groundwater contamination have found no documented research where levels from currently labeled materials have exceeded acceptable limits (Mitchell et al 1976, Gold et al 1988). Additionally, a comprehensive study was conducted by the US Environmental Agency on Cape Cod at four golf courses in 1990. The US Environmental Agency reported finding eight pesticides and pesticide metabolites and two pesticide impurities in groundwater. Only chlordane/heptachlor, a banned pesticide formation, was found in toxicologically significant concentrations. They concluded that there is not cause for concern about the use of currently registered pesticides for which they tested (including chlorothalonil, chlopyrifos, 2,4-D, dacthal, dicamba and isofenphos) on turf even in an area that exhibits many of the sensitivity factors. These studies suggest that the responsible selection, judicious use, and appropriate application of pesticides are the responsibility of the golf course superintendent to ensure protection of surface and groundwater features of the property.

Pesticides Properties

The potential ability of the pesticide for movement in the soil solution is based on the chemical properties of the material. Many materials are absorbed in the soil, primarily to the organic matter component, while a few are volatile and lost as vapors. All of these factors are considered in the degradation rate or how fast the material is broken down in the environment after they have been effective for the pests targeted by the application. In order for a chemical to contaminate the ground, it must move through the soil faster than it degrades. One index of pesticide leaching is the ability of the material to bind to the organic matter (organic carbon) fraction. This is indicated by the K^{00} value for each chemical. An index of how fast degradation occurs is the length of time required for 50 percent of the material disappears. This is the half-life or $T_{.05}$ value of the compound. These K^{00} and $T_{.05}$ are listed as mean values to assess which materials might be the most sensitive as to leaching potential. Another factor is which materials might be the most sensitive as to leaching potential. Also to be considered is the application rate. Pesticides that are applied at low rates are more favorable since the quantity of active ingredient to be degraded is smaller. Soil pH at The Course at Mount Greylock should be maintained in a range of 6.0-7.0 to favor microbiological activity that is a key component of pesticide degradation.

Management Practices

Application methods, pesticide rates and application timing will be critically evaluated to protect water quality. A qualified golf course superintendent, trained and licensed to properly apply materials, in consultation with agronomic and turf pathology specialists who are aware of and sensitive to the unique topography and environmental conditions found at The Course at Mount Greylock will be able to provide the margin of safety required for water quality protection. A highly trained, experienced and licensed pesticide application technician will be responsible for ensuring all safety regulations and application guidelines are met.

Pesticides, Sorption Coefficient (Koc), half life (t1/2), Relative Leaching Potential, Relative Runoff Potential, HALs, LC50, and EIQ Information

Pesticide	Koc, Sorption Coefficient (ml/g)	t ½, Half Life	Relative Leaching RLPI	Relative Runoff RRPI	HAL (ppb) Human	LC50 (ppb) Aquatic	EIQ
Meaning of numbers	smaller number > leaching	smaller number < persistence	smaller number > leaching	smaller number > runoff	small number > toxicity	small number > toxicity	small number < toxicity
What to look for in a chemical	high	low	high	high	high	high	low
acephate	2	3	7	7	30	730000	17.9
bendiocarb	570	15	1140	351	40	155	22.9
benefin	9000	66	>2000	3	2000	370	32.3
benomyl	1900	225	79	2	400	170	69.5
bensulide	1000	120	83	8	50	700	26.5
bentazon	34	20	17	17	20	635,000	38.7
carbaryl	300	10	300	300	700	114000	22.6
captan	200	2.5	800	800	900	732	28.6
chlorpyrifos	6070	30	>2000	5	105	7.1	52.8
chlorothalonil	1380	30	460	24	2	49	46.0
DPCA	5000	100	500	2	3500	100000	34.0
dicamba	2	14	1	1	200	28000	30
ethofumesate	340	30	133	98	8750	15000	
ethoprop	70	25	28	28	0.1	13800	44.6
etridiazole	1000	103	97	10	No Data	4000	38.3
fenamiphos	100	50	20	20	2	110	78.9
fenarimol	600	360	17	5	500	1800	27.3
fluvalinate	1000000	7	>2000	1	70	2.9	46.4
fonofos	870	40	218	29	10	20	44.6

esticide	Koc, Sorption Coefficient (ml/g)	t ½, Half Life	Relative Leaching RLPI	Relative Runoff RRPI	HAL (ppb)	LC50 (ppb)	EIQ
Meaning of numbers	smaller number > leaching	smaller number < persistence	smaller number > leaching	smaller number > runoff	smaller number > toxicity	smaller number > toxicity	smaller number < toxicity
fosetyl-Al	20	0.1	2000	>1000	21000	428000	13.7
glyphosate	24000	47	>2000	1	700	8300	32.4
iprodione	700	14	500	102	280	6700	26.6
isazophos	100	34	29	29	0.1	8	30.7
isofenphos	600	150	40	11	35	2000	58.9
mancozeb	2000	70	286	7	20	1000	62.3
mecoprop (MCPP)	20	21	10	10	35	150000	31.7
metalaxyl	50	70	7	7	420	>100000	29.2
MSMA	10000	1000	1000	1	700	12000	
oryzalin	600	20	300	83	400	3260	17.7
oxadiazon	10000	60	1000	1	40	320000	
PCNB	5000	21	>2000	10	21	1000	21.8
pendimethalin	5000	90	556	2	280	199	25.8
propiconazole	1000	110	91	9	91	>100000	33.5
siduron	420	90			8750	18000	
mazine	130	54	22	22	1	2800	15.7
thiophanate-methyl	1830	10	1830	55	560	11000	51.5
thiram	670	15	447	100	40	130	54.5
triadimefon	300	26	115	115	210	14000	33.3
trichlorfon	10	10	10	10	1250	400	31.2
trifluralin	8000	60	1330	2	5	41	26.8
vinclozalin	98	20	49	49	200	525000	29.4
2, 4-D amine	20	10	20	20	70	1100	56.3

Appendix II

BASIC TURFGRASS OPERATIONS GUIDE

The following remarks supplement the basic turfgrass operations calendar. It should be noted that this basic program might need to be adjusted from time to time due to weather or unforeseen situations. Pest management decisions must be adjusted based on thresholds and environmental interactions.

SOIL ANALYSIS
Samples representative of the greens, tees, fairways and roughs should be collected for laboratory analysis and recommendations. The primary purpose of soil testing is to ensure a sound lime and fertilizer program based on nutrient availability and balance for good growth of the grass. A healthy plant is less susceptible to disease and other pests.

TISSUE ANALYSIS
Will determine how effective the fertilization program is at arriving at the desired plant's nutritional level goal.

CALIBRATION OF EQUIPMENT
All spreaders and sprayers must be calibrated and repaired, if needed, for proper distribution of fertilizers and pesticides.

REPAIR AND SERVICE OF EQUIUPMENT
Repair, service, and paint equipment, as needed, for the coming season.

LIMING
Apply dolomitic limestone to any area where soil test results indicate the need.

FERTILIZING
The fertilizer program will be based on soil test results for pH, calcium, magnesium, phosphorus, potassium, copper, zinc and manganese. Nitrogen fertilization will be determined by color, density and the rate of growth (clipping yields) of the grass as well as soil nitrogen reserves.

IRON APPLICATIONS
Apply either iron or iron sulfate to correct iron chlorosis, to enhance the color of the grass without adding more nitrogen or to help reduce stress.

MOWING
Second to irrigating, mowing is the most important and most time-consuming maintenance operation on a golf course. Without regular mowing at the appropriate heights of cut, the course would become unplayable. With good mowing practices, density, texture, color, root development, wear tolerance and other aspects of turf quality are enhanced.

IRRIGATION PROGRAM
Each time water is applied, operate the system long enough to wet the soil to the depth of rooting. When greens are stressed, hand water or syringe during the heat of the day in addition to regular night irrigation.

SPIKING
The procedure is needed to relieve surface compaction and ensure good gas exchange (oxygen and carbon dioxide).

VERTICUTTING AND/OR BRUSHING
During the growing season, this operation is needed weekly to reduce mower induced grain and thatch buildup, and to provide a smoother, faster putting surface.

AERIFYING
Aerifying surfaces relieves compaction, increases soil and surface air exchange and improves fertilizer and water movement into the soil.

TOPDRESSING
In addition to following aerification, topdressing should be applied once or twice per month during the spring and fall months at the rate of one-quarter cubic yard per 1000 square fee. This practice not only helps control thatch, but also helps provide a smooth, true surface for mowing and accurate ball roll.

ROLLING
Use of lightweight rollers to improve green speed without lowering mowing heights.

DISEASE CONTROL
During periods when disease or conditions favoring a disease outbreak are prevalent, inspect the surfaces daily and treat only as necessary.

WEED CONTROL
Monitor for the presence of weeds. If the population becomes so large that it affects the playing surface, apply the appropriate herbicide.

INSECT CONTROL
Monitor daily for insect pests during the months they are most prone to be prevalent. However, do not treat unless the pest is found, identified and present in damaging numbers.

NEMATODE CONTROL
May be needed only once every year or two. When needed, the application would be done in conjunction with the May aerification.

WETTING AGENT APPLICATIONS
If localized dry spots appear on the greens, apply a good quality wetting agent and water immediately, to prevent yellowing of the grass. During this period, use a wetting agent when applying liquid fertilizer or pesticides unless the label states otherwise.

OVERSEEDING
For winter play.

Appendix III

PEST MONITORING GUIDES

WEED MONITORING GUIDE

Weeds germinate at different times of the growing season, therefore scouting should be done a different times based on weed type. Plan weed scoutings after period of peak germination. Scouting in late summer or early fall is most effective since all weed types are present and easily identified.

TYPE OF WEED	PERIOD OR PEAK OF GERMINATION	COMMENTS
crabgrass and other annual grass weeds	April to mid June	Soil temperatures are 53 to 58F at a depth of 4 inches for a week
summer annual broadleaf weeds	April to June	
winter annual broadleaf weeds and annual bluegrass	August to October	May develop seed heads in fall if weather is favorable
perennial broadleaf weeds	May to June August to September	

DISEASE MONITORING GUIDE

DISEASE	WEATHER/ SEASON*	NITROGEN FERTILITY**	DISEASE REDUCED BY KEEPING LEAVES DRY	DISEASE SYMPTOMS AND DIAGNOSTICS HINTS
Typhula blight (gray snow mold)	Cold Nov. to April	high	yes	Small to medium patches, gray mycelium, brown sclerotia, snow cover required for development
Fusarium patch (pink snow mold)	cool/cold Oct. to May	high	yes	Small spots that may coalesce, pink mycelium after snow, greasy, salmon to red-brown colored spots in absence of snow, no sclerotia, easily streaked
Yellow patch	Cool Nov. to April	high	yes	Medium to large patches or yellow rings, usually no mycelium
Red thread	cool/warm April to Oct.	low	yes	Red or pink mycelium of "thread" growing from tips of infected blades, straw-colored lesions, pink puffs of spores
Rust	cool/warm July to Oct.	low	yes	Rusty colored powdery spores on leaf blades and leaf sheaths
Powdery mildew	cool/warm July to Sept.	high	yes	White superficial powdery fungus on surface of leaves
Anthracnose	cool/hot May to Oct.	low	yes	Small to irregular spots, yellow leaf lesions with black centers, black hair-like setae on leaves or crowns.

DISEASE MONITORING GUIDE (continued)

DISEASE	WEATHER/ SEASON*	NITROGEN FERTILITY**	DISEASE REDUCED BY KEEPING LEAVES DRY	DISEASE SYMPTOMS AND DIAGNOSTIC HINTS
Leaf spots	cool/warm March to May Sept. to Nov.	high	yes	Oval or eye-shaped chocolate-brown spots often with tan centers
Pythium root rot	cool/warm/hot March to Nov.	no effect	no	Wilted, rotten or straw-colored
Fairy ring	cool/warm/hot April to Oct.	no effect	no	Small to very large rings or arcs of extra green, wilted or dead turf, mushroomy smell to thatch, mushrooms, puffballs or mat of white mycelium in thatch may be associated with rings or arcs
Take-all patch	cool/hot March to June Sept. to Nov.	no effect	no	Medium patches or rings, no mycelium on leaves, roots often brown and decayed, bentgrass
Dollar spot	warm June to Sept.	low	yes	Small spots, straw-colored lesions that extend across leafblade, white mycelium when turf is wet
Necrotic ring spot	warm June to Sept.	no effect	no	Medium patches or rings, no mycelium on leaves, roots often brown and decayed, *Poa annua*

DISEASE MONITORING GUIDE (continued)

DISEASE	WEATHER/ SEASON*	NITROGEN FERTILITY**	DISEASE REDUCED BY KEEPING LEAVES DRY	DISEASE SYMPTOMS AND DIAGNOSTIC HINTS
Pythium blight	hot June to Aug.	high	yes	Small spots, greasy brown to reddish, gray-white, cottony mycelium in early morning, easily streaked
Brown patch	hot July to Sept.	high	yes	Large patches, irregular-shaped lesion with thin brown margins, grayish smoke rings at outer edge when turf is wet
Summer patch	hot July/ August	no effect	no	Medium patches or rings, leaves turn yellow or brown starting at tip, no mycelium on leaves roots often brown and decayed, *Poa annua*

*Weather and time of season play an important role in disease occurrence and severity
** Fertility may directly affect disease occurrence and severity

COLLECTING DIAGNOSTIC SAMPLE

Collect a 4-6" sample from the "leading edge" of a problem including roots and soil to a depth of at least 2" and foliage showing symptoms. Keep the sample moist and cool, but do not water or seal tightly in plastic. Wrap the sample in several layers of newspaper and pack in snugly in a sturdy box. If you suspect an unusual problem, take a sample before spraying a fungicide. It is often difficult to make an accurate diagnosis after a fungicide has been applied. Accurate disease diagnosis requires both a representative sample and sufficient information about the cultural practices and environmental conditions, therefore, a turf disease case history sheet must be submitted with the sample.

INSECT MONITORING GUIDE

INSECT	WHERE	WHEN	SAMPLING TECHNIQUES
annual bluegrass weevil	annual bluegrass; greens, tees, collars, fairways	adults- April to early May July to Sept. larvae – June to Sept.	adult- soapy flush larvae – visual inspection (soil/thatch core, float)
black turfgrass ataenius	greens, tees, collars, fairways	adults-April to May late July to Aug. larvae – late May to Sept.	adult – soapy flush larvae – soil sample
cutworms	greens, tees, (occasionally fairways)	adults-May to Sept. larvae-late May to Sept.	adult-blacklight trap larvae-soapy flush
white grubs	all turf	adults-mid June to Sept. larvae-March to May July to Dec.	adult – pheromone traps (oriental beetle, Japanese beetle) larvae-soil sample
billbugs	all turf, esp. fairways and roughs	adults- May to early June larvae – June to Aug.	adult – soapy flush larvae – visual inspection (soil/thatch core, float)
ants	all turf, esp. fairways and tees	adults-late April to late Sept.	adult-count active mounds per unit area

soapy flush-add 1 to 2 tablespoons of lemon scented liquid dish detergent to 1 gallon of water, pour over area 2ft. by 2ft. Caterpillars, earthworms and adults of some species will be irritated and crawl to surface within 5 minutes (usually quicker). If sampling in mid-summer, rinse the area after counting insects to avoid scalding turf.

visual inspection-take a sample with a cup cutter, gently break apart turf and thatch, and look for insects. Place all material in dishpan with luke warm water. Insects will float to surface.

soil sample-take a soil sample with a cup cutter to a depth of 2-4 inches. Break apart soil, looking for eggs (pearly white, spherical, 1/16 to 1/8 inch diameter) or grubs (cream colored, c-shaped, 3 pairs of legs just behind brown head).

NEMATOADE MONITORING GUIDE

Symptoms caused by nematodes are not unique to nematodes. Wilting, turf decline, reduced vigor and shortened roots are all symptoms that result from nematode injury; however, compaction, root and crown disease, drought and other stresses will result in the same symptoms. For this reason, IT IS ESSENTIAL TO HAVE THE SOIL AND/OR ROOTS ASSAYED TO DETERMINE IF NEMATODES ARE THE CAUSE OF THE PROBLEM. See below for instruction on collecting soil samples.

NEMATODE	SEASON	SYMPTOMS (also see above text)
Ectoparasitic Nematodes		
Lance Needle Ring Spiral Stubby Root Stunt	May to October	Ectoparasitic nematodes do not cause unique symptoms on roots: although, Stubby root and Needle may cause swelling of the root tips (this is difficult to see).
Endoparasitic Nematodes		
Cyst	May to October	Cysts can be found attached to plant roots if roots are washed gently.
Root-Knot	May to October	Swelling and galls develop on roots.
Lesion	May to October	Small lesions may occur on roots.

COLLECTING SAMPLE FOR NEMATODE ESSAY

When damage is evident, collect a sample from the affected area and , for the purpose of comparison, a sample from an adjacent unaffected area. When no damage is evident and the purpose of sampling is to monitor populations over the season or from season to season, sample should be taken from an area no larger than 500 sq. ft. and repeat sample should be taken from an area no larger than 500 sq. ft. and repeat samples should be taken from same area. Collecting a composite sample (15 to 20 sub samples, using a ¾ to 1 inch soil probe, or similar device, at a depth of 4 inches throughout the site) will yield the most accurate estimation of nematode populations. The sample (at least ½ pint) should be placed in a container, such as a plastic bag and clearly labeled with sample number. Sample should be refrigerated or delivered as soon as possible after collection.

Appendix IV

PEST THRESHOLD GUIDELINES

Weeds

No threshold guidelines are available at present. However, weed species action thresholds can be established for a specific use area on a specific course. The action level may vary from species to species. For example, one crabgrass plant may result in a 50 to 60 tiller plant during one growing season, in contrast, one dandelion remains as one plant. Preventive control may be used based on scouting information on weed species.

Diseases

List diseases that are treated preventively and curatively. For curative treatments, determined disease levels that require treatment on greens, tees and fairways.

Insects

Below are action threshold guidelines for some turf insects. However, these guidelines should be viewed as starting points only. For example, some golf courses may lose turf with 4 or 5 grubs per square foot, while others (with unlimited water, higher mowing heights, low traffic) may sustain populations of 25 to 30 grubs per square foot with no apparent damage.

Table1.

INSECT	GENERAL ACTION THRESHOLD (NO./SQ. FT.)	COMMENTS
annual bluegrass weevil	spring generation – 30 to 80 larvae summer generation-10 to 15 larvae	summer generation higher where grass is under less stress or there is little annual bluegrass
black turfgrass ataenius	spring generation – 30 to 80 grubs summer generation – probably slight lower	higher spring generation population have bee observed
cutworms		highly variable, driven by membership
white grubs	3 to 5 (May beetles, European chafer) 15 to 20 (Asiatic garden beetles, masked chafers)	depends on grub species and population of skunks and raccoons in the area
ants		highly variable, driven by membership

NEMATODES

Nematicides should not be applied without lab confirmation of pest and population. The best time to apply nematicide is in the first two weeks of June. This will insure suppression of nematodes before population peak, and reduce nematode pressure during the stressful months of July and August. In most cases, nematicide applications after August 1st are difficult to justify. An exception is for cyst nematodes. Juveniles emerge around mid-April, and the 1st of August. To control cyst nematodes, nematicide should be apply be mid-April and about the 1st of August.

Table 2.

NEMATODE	THRESHOLD LEVELS (NO./100 CC OF SOIL)
Ectoparasitic Nematodes	
Needle	100-200
Lance	400-800
Stunt	800-1,500
Spiral	>3,000
Ring	>4,000
Stubby Root	100-300
Endoparasitic Nematodes	
Cyst – cysts juveniles	25-50 500-1,000
Root-knot juveniles	500-1,000
Lesion	100-200

Appendix C

To: Stuart Weinreb@RC@DEM Boston
Cc: Douglas Paine@BRP WS@DEP WERO,Jeremiah Mew@BRP WW@DEP WERO,Jim H
ston,Paul Nietupski@BRP WPC@DEP WERO,Stephen D. Brown@RC@DEM Bos
rman@Operations@DEP WERO,Timothy McKenna@BRP WW@DEP WERO
Bcc:
From: Kurt Boisjolie@BRP MUNICIPAL@DEP WERO
Subject: Greylock Center - DEP Permits
Date: Monday, August 16, 1999 18:35:25 EDT
Attach: BEYOND.RTF
Certify: N
Priority: Normal
Defer until:
Expires:
Forwarded by:

Stu,

Regarding the Greylock Center project in Adams, we understand from our August 9, 1999 Meeting between DEP, DEM, and DEM's consultants (Copley Wolf, FST, Epsilon, and Wetlands/Wildlife) that DEM intends to submit a Notice of Project Change to MEPA on or about August 31, 1999. The Notice of Project Change will discuss proposed changes resulting from DEIR comments and post-DEIR information. The target date for the FEIR has been moved to November 1999, with Notice of Intent to the Adams ConComm scheduled after the FEIR process.

The Project is divided into 2 phases. Phase 1 involves the Golf Course and Clubhouse, 15 Kilometers of trails, the Greylock Lodge/Environmental Center, up to 50 units of housing, and the connector road between Gould Road and West Mt. Road. Phase 2 involves among other items the remainder of the Greylock Village, 3 remote camping/tenting/rustic cabins sites, and 25 Kilometers of trails. The amount of cumulative wetland impact in Phases 1 and 2 is estimated to be less than 5000 square feet. Groundbreaking for Phase 1 is tentatively scheduled for Spring 2000.

The following information is provided in response to request made at the August 9, 1999 Meeting :

1) In light of the proposed use of Adams Fire and Water District (FWD) water for irrigation and snowmaking use, in addition to potable and sanitation use for this project, DEP records show that the Adams FWD has a WMA Registration for 2.0 Million Galllons per day (MGD) of allowable water withdrawal , as per its October 1997 registration renewal (good until Jan 2007). This registered volume is approximately 0.3 to 0.7 MGD more than the average water use for the Adams FWD in the past 5 years, which was as follows:

1994: 1.69 MGD; 1995: 1.37 MGD; 1996: 1.30 MGD; 1997: 1.42 MGD; 1998: 1.42 MGD

2) DEP Permit BRP-WS-32 will be required for the Water Main extension, Storage tank, and Pump Stration planned too serve Greylock Center's potable and Irrigation/snowmaking needs. Attention should be paid to the resulting water pressure on the suction side of the proposed Pump Station within the Adams FWD distribution system.

3) DEP Permit BRP-WP-13 will be required for the Sewer extension , assuming
the extension will be more than 2, 500 feet in length, or flows greater than 50,000 gpd, or that a pump station will be rquired. (If length is less than 2,500 feet, and flows less than 50,000 gpd, and no pump station, DEP permit BRP-WP-14 may be applicable).

4) DEP Permit BRP WP-63 will be required for the on-site wastewater disposal systems envisioned for the Phase 2 rustic cabins/tenting/camping areas. Note that the cumulative design wastewater flow to all on-site wastewater disposal areas is assumed to be less than 10,000 gallons per day. If cumulative design flows for on-site wastewater disposal systems are greater than 10,000 gpd, a groundwater discharge permit shall be required.

5)Wetland/Riverfront/Stormwater Issues will be discussed in a separate e-mail next week. Further discussion of such issues may occur next month (Sept 99) during the comment Phase of the Notice of Project Change.

----------FINIS----------

Greylock Center Municipal Water and Sanitary Sewer Demand

Area	Residential	Bedrooms	Seats/ Persons	Area 1000 sf	Flow gallons (unit*day)	Sewer gpd	Estimated Sewer gpd	Water Demand gpd
Hotel/Conference and Clubhouse								
Phase I Guestrooms	46	46			110	5,060	5,100	5,600
Phase II Guestrooms	126	126			110	13,860	13,900	15,300
Total Restaurant			150		–	–	–	–
Golf Clubhouse			50		10	500	500	600
Hotel/ Conference and Clubhouse Total		172	50			19,420	19,400	21,300
Greylock Environmental Center								
Main Building		0			110	7,040	7,000	7,700
Cabins		50			110	10,230	10,200	11,200
Greylock Environmental Center Total		50				17,270	17,300	19,000
Residential Units								
Multifamily (2 bdrm/unit)	32	64			110	7,040	7,000	7,700
Multifamily (3 bdrm/unit)	40	120			110	13,200	13,200	14,500
Duplex (3 bdrm/unit)	136	408			110	44,880	44,900	49,400
Single Family (4 bdrm/bldg)	35	140			110	15,400	15,400	16,900
Mountain Cabins (3 bdrm/bldg)	40	120			110	13,200	13,200	14,500
Residential Units Total	283	852				93,720	93,700	103,100
Commercial/Public Buildings Greylock Inn								
Bed and Breakfast		28			110	3,080	3,000	3,000
Tavern			100		35	3,500	4,000	4,000
Institute Building			300		10	3,000	3,000	3,000
Village Store / Café								
Store / Café				4	50	200	200	200
Residences (2 bedroom)	4	8			110	880	900	1,000
Artisans Building								
Studio / Gallery				5	50	250	300	300
Residences (2 bedroom)	5	10			110	1,100	1,100	1,200
Mgmt/Sales Building								
Offices				3	75	225	200	200
Residences (2 bedroom)	5	10			110	1,100	1,100	1,200
Sports Center								
Stores / Fitness Facility				3	50	225	200	200
Residences (2 bedroom)	3	6			110	660	700	800
Meeting Hall/Playhouse			100		15	1,500	1,500	1,700
Commercial/Public Bldgs Total	17	62	500	15		15,720	15,700	17,300
Total Design Flow								
Commercial/Public Buildings	17	62	500	15		15,720	20,000	22,000
Residential Units	283	852				93,720	90,000	99,000
Hotel/ Conference and Clubhouse		172	50			19,420	20,000	22,000
Greylock Environmental Center		50				17,270	20,000	22,000
Total Design Flow						146,130	150,000	165,000

Irrigation System Description

The Greylock Center Project intends to incorporate a golf course into the resort infrastructure. To promote healthy turf for the golf course, a totally automatic multiple row irrigation system is to be installed. To reduce capital costs and redundant infrastructure the irrigation system water plant and water distribution system will be integrated with the proposed snowmaking system. The proposed irrigation system will consist primarily of valve-in-head sprinklers and computerized control system. The valve-in-head sprinklers and computerized control of the sprinklers provide optimum control over the distribution of water to turf areas as each area requires, dependant on weather, soil types, slope, and other factors affecting the evapotranspiration of the turf.

System Capacity

To meet the watering requirements, the irrigation system requires a capacity of approximately 1000 gpm. The water shall be supplied to the sprinklers at a pressure of 80 psi. Thus the water pumping system shall utilize a Variable Frequency Drive (VFD) to allow for constant pressure adjustment at the sprinklers, and to operate the snowmaking system

System Infrastructure

Water Supply System

Water for the irrigation system shall be supplied from holding tank located near the maintenance center on the East edge of the project. The total annual water requirement for irrigation is approximately 14-17 million gallons. This shall be supplied to the irrigation system at a rate of 1000 gpm.

Power Supply System

All power to operate the pumps shall be supplied by the local service utility via their primary distribution system. The pumping system shall require a 230 kW to operate.

Water Piping

The water distribution system shall be composed of the following type of piping:

Combined irrigation system and snowmaking pipe - coated steel pipe
Irrigation system only pipe: polyvinyl chloride pipe

The pipe shall follow the routing proposed on the irrigation /snowmaking routing plan. All main line piping for the irrigation system only shall be buried a minimum of 18"-24" below finished grade. Irrigation system lateral piping, the piping connecting the sprinklers to the main line piping, shall be buried a minimum of 12" below finish grade. All piping for combined irrigation and snowmaking shall be buried a minimum of 5' below the finished grade surface. In areas where there is the potential for coated steel pipe deterioration, an anode protection system is proposed to protect the pipe from deterioration.

Snowmaking System Description

The Greylock Center Project intends to incorporate a snowmaking system into the resort infrastructure to provide snow coverage on a small percentage of the trail system. To reduce capital costs and redundant infrastructure the snowmaking water plant and water distribution system will be integrated with the proposed golf irrigation system. The proposed snowmaking system will consist primarily of portable fan technology snowmaking guns with support of low air consumption towers on the Tubing Park and Learning Center. Fan and tower technology is generally quieter, and less energy intensive than traditional technology systems used at most alpine resorts.

Acreages and Objectives

The snowmaking system is proposed to cover approximately:

- 10,430 Lineal feet of trail in Phase 1
- 5+ Acres of terrain for a tubing park and learning area in Phase 1
- 14,640 Lineal feet of trail in Phase 2
- 2-3 Acres of terrain for terrain garden area in Phase 2
- 6,570 Lineal feet of trail in Phase 3

In order to support grooming operations and multiple track use the trail lengths and open terrain areas are:

- Phase 1: 9.8+ acres
- Phase 2: 9.7 acres
- Phase 3: 3.0 acres

Since the trails are relatively new and on fairly level terrain approximately 12" of snow cover will allow the terrain to be opened for operations. Thus the following snow volumes are required:

- Phase 1: 9.8+ acre-feet of snow
- Phase 2: 9.7 acre-feet of snow
- Phase 3: 3.0 acre-feet of snow

The snowmaking system coverage objective is to open all snowmaking terrain by December 25, vacation week. In addition to providing sufficient snow coverage to open the snowmaking terrain, the snowmaking system will provide recovery from seasonal thaws and snow-pack breakdown due to use. Typically, this equates to at least one (1) additional coverage of all terrain.

System Capacity

To meet the snowmaking objectives the plant requires a water capacity of approximately 1000 gpm. To convert the water into snow a combination of five (5) fan and twenty (20) low air consumption towers shall be employed. Operation of the low air consumption towers requires 1500 acfm of air compressed to 100 psi. The compressed air shall be rented for the beginning of the snowmaking season and then removed after the initial coverage is achieved. The water shall be supplied to the snowguns at a pressure of 250 psi. Thus the water pumping system shall utilize a Variable Frequency Drive (VFD) to allow for constant pressure adjustment at the snowguns, and to operate the golf course irrigation system

System Infrastructure

Water Supply System

Water for the snowmaking system shall be supplied from retention pond 1 located near the maintenance center on the East edge of the project. The total annual water requirement for snowmaking is approximately 2.2 million gallons. This shall be supplied to the snowmaking system at a rate of 1000 gpm.

Air Supply System

Compressed air shall be supplied by two 275 Hp/750 acfm portable rental air compressors. These shall be rented for the month of December until approximately January 15 every year. The compressors shall be temporarily located in a corner of the Club House parking lot. The compressors shall be supplied in noise reduction containers, air to air aftercoolers, and moisture separators.

Power Supply System

All power to operate the pumps and fan guns shall be supplied by the local service utility via their primary distribution system. The pumping system shall require a 230 kW to operate. The fan snowgun power distribution system shall provide 180 kW/3 phase/480 V to the snowguns.

Trail Infrastructure

Water Piping

The water distribution system shall be composed of coated steel pipe. This pipe shall follow the routing proposed on the snowmaking/irrigation routing plan. All snowmaking pipe shall be buried a minimum of 5' below the finished grade surface. In areas where there is the potential for pipe deterioration an anode protection system is proposed to protect the pipe from deterioration.

Air Piping

Air piping shall be installed in the areas designated on the snowmaking/irrigation plan. This region is predominantly in the Tubing Park and Learning Center Area. The air pipe shall consist of coated steel pipe installed below the ground surface. All air pipe shall be pitched to a single point of drainage.

Power Distribution

Power for the fan snowmaking guns shall be supplied via an electrical network supplied from various points throughout the distribution grid. The power distribution system supporting the fan guns shall also supply power to the cross-country trail night-lighting network.

Water and Air Hydrants

Water hydrants shall be 2" diameter 8' long standard self-draining hydrants. The hydrants shall be installed at 150 ft intervals along the pipelines. Each hydrant shall be installed with a 6" diameter PVC sleeve. This will allow from removal of the snowmaking hydrants at the end of snowmaking operations. A plastic cap shall be provided to prevent intrusion of materials into the sleeve.

Air hydrants shall be installed adjacent the water hydrants wherever the air system is proposed. These hydrants shall be installed similar to water hydrants to allow for removal after completion of snowmaking operations.

Power Pedestals

An electrical disconnect pedestal shall be installed with each snowmaking water hydrant to provide power to the fan snowguns.

Tower Gun Mounts

Tower gun mounts shall be installed at 75 foot intervals adjacent the Tubing Park and Learning Center areas. These tower gun mounts shall be installed to allow for removal upon completion of snowmaking operations.

Appendix D

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF TRANSPORTATION AND CONSTRUCTION
PUBLIC WORKS ECONOMIC DEVELOPMENT (PWED)

GOULD ROAD CONNECTOR PROJECT



Town of Adams
8 Park Street
Adams, Massachusetts

Town of Adams · Massachusetts 01220-208

OFFICE OF THE SELECTMEN

Meetings: Wednesday evenings 7:00 o'cl
TOWN HALL BUILDING
8 PARK STREET
TEL. (413) 743-8300
FAX (413) 743-8316

January 5, 2000

Secretary Kevin J. Sullivan
Capital Expenditures and Program Office
Massachusetts Highway Department
10 Park Plaza, Room 3190
Boston, MA 02116-3969

Re: PWED Grant Application

Dear Secretary Sullivan:

The Town of Adams is pleased to submit with this letter an application to the Public Works Economic Development Program for $1,000,000. These funds will be used to construct a new roadway and bridge to serve the proposed Greylock Center Development.

Greylock Center is a public-private venture proposed by the Massachusetts Department of Environmental Management (DEM), owner of the site since 1989, and Greylock Management Associates (GMA), the designated private development team, undertaken by the legislative authority of Chapter 676 of the Acts of 1985. The site, also known as Greylock Glen, consists of approximately 1,063 acres of land in the Town of Adams located at the base of Mount Greylock's eastern slope. Greylock Center is an exciting and creative project weaving together environmental education, year-round recreation and sustainable development. At full build-out, the $118.9 million center will include: a 172-room resort hotel and conference center, an 18-hole golf course and appurtenant buildings, up to 300 residential units clustered in a village complex and in rustic mountain cottages, an environmental education center, a 28 room bed & breakfast, and numerous recreational amenities including campground sites and trails for hiking, cross-country skiing and horseback riding. This project will create linkages to other cultural and recreational resources, the Berkshire's growing tourist markets and will integrate a standard of environmental education and sustainable development, which can be of national significance.

The demographic and economic trends in Adams are unmistakable. A population that has already fallen from 13,500 to 9,200, unemployment rates double that of the state average, increasing tax foreclosures, and a $9 million decrease in property values in one year, to name a few. One might think that the past eight years of a booming national and State economy must have changed or at least diminished this need. However, even during the best-of-times, the Northern Berkshire economy continues to erode. During the past few years, Beloit Jones laid off 270 employees in August 1998; General Dynamics laid off 135 in March 1998; Price Chopper eliminated 49 positions in June 1998; General Dynamics laid off 100 in November 1997; Beloit

Jones laid off 22 in October 1997; Storey Communications laid off 25, in September 1997; General Dynamics laid off 650, and in September 1997, Specialty Minerals laid off 17. These must be viewed in the context of 425 jobs lost with the closing of Waverly Fabrics and an additional 1,000 person lay-off from Sprague Electric that occurred since the enactment of Chapter 676.

The legislature recognized this compelling economic need in 1985, with the emergency act authorizing this development, stating that its deferred operation "would defeat its purpose." During the fifteen years since its enactment, the economic need for the development has become even more critical.

Respectfully,

Edward MacDonald

ADAMS BOARD OF SELECTMEN

Table of Contents

1. PWED Grant Application

2. Exhibit A
   - Greylock Center, Preferred Alternative, August 31, 1999

3. Exhibit B
   - Proposed Connector Road, Conceptual Plan, March 4, 1999
   - Proposed Connector Road, Conceptual Profile, March 3, 1999
   - Greylock Center Site Covered Bridge Concept

4. Exhibit C
   - Preliminary Construction Cost Estimate

5. Exhibit D
   - Phase I - Sources and Uses Schedule

6. Exhibit E
   - Phase I - Impact Analysis
     - Annual Fiscal Revenues
     - Employment
     - One-time Fiscal Revenues
     - Total Economic Impacts
   - Phase II - Impact Analysis
     - Annual Fiscal Revenues
     - Employment
     - One-time Fiscal Revenues
     - Total Economic Impacts

7. Exhibit F
   - Certified Resolution and Vote application authorization

8. Exhibit G
   - Developer Designation / Private Sector Commitment

9. Exhibit H
   - Lead Agency Designation

10. Exhibit I
    - Tax Increment Financing Agreement

11. Exhibit J
    - Public Comment

12. Exhibit K
    - Demographics

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF TRANSPORTATION AND CONSTRUCTION
PUBLIC WORKS ECONOMIC DEVELOPMENT (PWED)
GRANT APPLICATION

MUNICIPALITY: Town of Adams

PROJECT NAME: Gould Road Connector

LEAD AGENCY DESIGNATION
Name: Department of Public Works
Town of Adams, Massachusetts

Address: Town Hall Building
8 Park Street

Municipal Contact Person:
James J. Leitch, Town Administrator

****

1. PROJECT DESCRIPTION

A. Locus of Project: (Be as specific as possible. Enclose locus map and/or other graphic material if available.)

The proposed Gould Road Connector is located on the west side of the Greylock Center project site, at the base of Mt. Greylock in Adams. The connector extends between Gould Road and West Mountain Road, both of which are existing public roads. The overall development plan and proposed roadway alignment are illustrated on the plan entitled Greylock Center, Preferred Alternative, dated August 31, 1999, attached as "Exhibit A".

B. Scope of Work: (List work; be as specific as possible.)

The Gould Road Connector Project work includes the construction of a new 4,500 foot long public roadway. The Road will connect two sections of the site bisected by Pecks Brook. The work includes the construction of a 104 foot covered bridge which will span the brook, its profile, and bridge are shown on the plans attached as "Exhibit B":

Proposed Connector Road, Conceptual Plan, March 4, 1999
Proposed Connector Road, Conceptual Profile, March 3, 1999
Greylock Center Site Covered Bridge Concept

C. Purpose of Project: (What will project change; what is intent of project?)

The Greylock Center Development is a public-private economic development project authorized by Chapter 676 of the Acts of 1985. It is predominantly an educational and recreational based development designed to provide economic benefit to the region. Phase I will include a world-class 18 hole golf course designed by Hurdzan-Fry, 40 room environmental education and conference center, 40 room inn, a network of cross-country ski and hiking trails, DEM's Parks College, and a residential component. Phase II will include 160 room conference hotel, 25,000 s.f. commercial space, 25,000 educational institute, and a residential component. The estimated cost of phase I is $35,280,000 and the estimated cost of Phase II is $82,560,000.

Construction of the connector road and bridge are critical to the development of Phase I. The road will 1) provide internal circulation connect two sections of the site bisected by Pecks Brook, 2) provide required emergency access to developed areas of the site located on dead-end roadways, and 3) reduce traffic on West Mountain Road.

D. Need for Project: (Who will benefit; what are alternatives to project? What are advantages?)

The Greylock Center Development regional economic development project will benefit the economically depressed Northern Berkshire County in general and the Adams business community in particular. The project is one of several important elements leading to the creation of an identity in the fast growing tourism market. It will contribute to Northern Berkshire County's growing identity as a tourist destination, as demonstrated by the success of the Massachusetts Museum of Contemporary Art in the neighboring City of North Adams. The Gould Road Connector is critical to the project for the reasons listed in "C" above. As part of the MEPA process all alternatives have been explored exhaustively. There are no other viable alternatives to the construction of the roadway. This roadway alignment is preferred based on environmental impact analysis and site planning considerations.

2. PROJECT COSTS

A. Use of Funds: (Itemize costs in each three categories, using separate pages as necessary.) **(PWED Connector Road only)**

(1)	Architectural/Engineering/Design	$114,377
(2)	Construction	$885,622
(3)	Other	$0,000
	Total funding	$1,000,000

A more detailed estimate is attached as "Exhibit C":

B.

1. Source of Funds: **(PWED Connector Road only)**

(1)	PWED Request	$1,000,000
(2)	Municipality (Chapter 90, etc.)	$0
(3)	Other State grants	$0
(4)	Federal grants	$0
(5)	Private funds	$0
	Total funding	$1,000,000

2. Source of Funds: **(Total Greylock Center Development)**

(1)	PWED Request	$1,000,000
(2)	Municipality (tax increment financing)	$750,000
(3)	DEM Chapter 676	$6,550,000
(4)	Other State/Federal grants	$5,275,000
(5)	Private funds	$21,525,000
	Total funding	$35,100,000

A detailed summary of Development costs is attached as "Exhibit D", and the TIF agreement as "Exhibit I".

C. Implementation Timetable:

(1) Project Start Date: 7/1/2000 End Date: 11/1/2001

(2) Can project be phased? Yes **No**

Costs for each phase? Phase I Phase II Phase III

Estimated timetable for each phase?
Completion date - Phase I 11/1/2001
Completion date - Phase II N/A
Completion date - Phase III N/A

3. ADDITIONAL PROJECT RELATED INFORMATION

A. Roadways included in project:
Street Name/Route #: Gould Road Connector
Limits of Work: See "Exhibit B" including
Proposed Connector Rd, Conceptual Plan, March 4, 1999
Proposed Connector Rd, Conceptual Profile, March 3, 1999
Greylock Center Site Covered Bridge Concept

B. Property interest to be acquired:
Location: See "Exhibit B"
Owner: DEM, Commonwealth of Massachusetts
Type of interest: Fee simple
Estimate(Fee/Easemt): No cost to Town of Adams

C. Highway considerations:
State highway included/intersected? Yes **No**
Location:
Bridges included? **Yes** No
Location: Pecks Brook (see "Exhibit A and B")

Roadway previously included in federal aid project? Yes **No**
Explain:

Roadway included in proposed federal aid project? Yes **No**
Explain:

Roadway included on federal aid highway system? Yes **No**
Section of road: Federal Aid System:

Roadway subject to traffic control agreement? Yes **No**
Section of road: Date of agreement

Traffic signals included? Yes **No**

D. Environmental concerns:

(1) ENF filed with MEPA? **Yes** No
Status: Draft EIR filed June 1998
Notice of Project Change filed August 1999
Final EIR to be filed January 2000

(2) Nearest wetlands to project: Pecks Brook
Site: Distance from project: bridge spanning
no direct alteration of BVW

(3) Project in national, state, or local historic district? Yes **No**

(4) National, state, or local landmark within project? Yes **No**

(5) Unlisted historic/archeological properties within project? Yes **No**
Note: Consult Mass. Historic Commission.

E. Permits required for project? **Yes** No
Type: Order of Conditions, Special permit
Source: Town of Adams

F. Is the municipality in violation of any executive order, regulation, or other administrative or legislative directive which limits its eligibility for PWED grant? Yes **No**

4. DESCRIPTION OF LOCAL ECONOMIC DEVELOPMENT EFFORTS

A. Does municipality have an economic or community development master plan? Yes **No**

(1) How will proposed project help to promote the plan?
Explain: N/A

(2) If no plan exists, how will project promote economic development in community?

This project has been included in and/or recommended in all major planning efforts in the Town of Adams for well over a decade, including:

1. Governor's Task Force Report, March 1986
   A Strategy for Economic Development, Northern Berkshire Region
2. Growth Management Plan, Connery Associates, March 1988
3. Master Plan, University of Massachusetts, August 1985
4. Open Space & Recreation Plan, University of Massachusetts 1997
5. Sustainable Economic Plan, University of Mass., May 18, 1998

The Gould Road Connector Project will lead to the construction of the Greylock Center Development. This development is expected to generate jobs on site for construction and operation of the facility. It will also create secondary jobs as a result of material and supply purchases as well as tourism promotion. The projected economic impacts are attached as "Exhibit E".

B. CARD Designation:

Is project within a CARD? Yes **No**

C. Public/Private Participation:

Will project ensure or enhance probability of public or private investment in the community or the project?

Yes No

Explain: The PWED project will lead to the construction of the Greylock Center Development which will leverage over $20,000,000 of direct private investment (see "Exhibit D").

D. Economic Benefits and Demographic Support Data:
Number and type of jobs to be created or retained; municipal unemployment data; local tax data, etc.

The PWED project will lead to the construction of the Greylock Center Development. Phase I is estimated to generate 326 person-years of employment during construction and 73 permanent jobs at the site. Phase II is estimated to generate 1,161 person-years during construction and 217 permanent jobs at the site (see "Exhibit E"). More than 52% of Adams' households are low or moderate income with a per capital income of $12,790. Unemployment rates in Adams are historically more than double those of the State, with an 1998 average annual rate of 5.6%. It has a higher representation of elderly than Berkshire County and State, with 73.8% low and moderate income elderly households. Additional information is attached as "Exhibit K".

PUBLIC HEARING – 7:15 PM

Chairman MacDonald opened the Public Hearing at 7:15 PM. Administrator Leitch explained that the reason for the public hearing was to receive public comment on the Public Works Economic Development (PWED) Grant Application to fund one component of the Greylock Center project, which is a recreationally based, economic development project that is undertaken as a public/private partnership between DEM, GMA and the Town of Adams. The project site is a 1,063-acre parcel located west of West Road. He said the connector road, which is the subject of this public hearing, is approximately 4,500 feet long and includes the construction of a 104-foot wooden covered bridge over Pecks Brook. The location is immediately east of the property line of Gould Farm. Administrator Leitch further explained that the estimated cost of the project is $1,000,000. He said $114,000 is for engineering and the remainder is for construction. He said this component of the project would be 100% funded through the PWED grant program. Administrator Leitch further advised that there is a large private sector investment in the project as a whole and there is an investment from the state and the municipality in the project as a whole. He also advised that the general alignment of the connector road extends from West Mountain Road to the south northerly to the intersection of Gould Road to the north. He said this would be a new, public road and it would be the only public road on the project site. Administrator Leitch then turned the hearing over to Stuart Winereb, of the Dept. of Environmental Management. Mr. Winereb advised that DEM is the agency responsible for managing the progress and coordinating with the partners. Mr. Winereb stated that DEM fully and enthusiastically supports the Town's application for this PWED grant for the connector road. Mr. Winereb explained some of the benefits of the road. One of the primary concerns stated in the application is public safety. He said he thinks this is a very valid concern with the level of development that is anticipated for the project. He said emergency vehicles and personnel should be able to gain access to the site in case of an emergency and two roads would be indicated under those circumstances. He further explained that to the south is the village and to the north is the golf course and, without this connector road the two major pieces of the project are not well connected. He said the connector road makes a lot of sense in terms of internal circulation and creating the kind of connectedness between the major elements of the project, which we have worked very hard to establish. Mr. Winereb stated that they have worked over the years to develop alternatives for additional access to the project site. He said they feel that this proposed crossing is the least impactfull of all the alternatives. He said the connector road would support the idea that Gould Road would be the major access for the project. He said this is a benefit because the West Mountain Road residents stated that they didn't want a lot of new traffic coming up West Mountain Road. Mr. Winereb said some people have asked why the connector can't be a trail. He said the conclusion that they came to was that a trail would have virtually the same impact as the road from an environmental standpoint. Mr. Winereb said they also see an opportunity here with regard to the Timber Bridge, which they see as a way of introducing a time-proving technology to lesson the storm water impacts on the area around Pecks Brook. Mr. Winereb said that there are a lot of very positive elements to the connector road and that they see it as something that should absolutely go forward and will help the project. Chairman MacDonald then opened the hearing up to public comment. The following public comments were received:

Anthony McBride, 6 Liberty Street, President of the Berkshire Chapter of the Sierra Club and Chairman of its Executive Subcommittee, said that he echoes Mr. Winereb's remarks of this proposal. He said he had an opportunity to review it and he finds, as a former member of the Joint Legislative Committee on Natural Resources for 6 years, and having been privy to some of the formatting of the rules and regulations, that this should meet all the requisites of it. He said he stands with the Board of Selectmen in endorsing this project.

Nancy O'Brien, a resident of Adams for most of her life, said she had questions and concerns, rather than comments. She said she, and others who couldn't be at the meeting, had compiled a list of questions and concerns. She said one concern is with regard to the bridge at River Street and Harmony Street, which has been shut down for two years because of lack of funding. She asked how the grant for the funding of the connector road can be justified under these circumstances. Administrator Leitch stated that the bridge referred to would not be eligible under this program. He further advised that the bridge is listed on the state's Bridge Replacement Program and MA Highway is going to fund it. He said it is in the engineering stage but construction has been delayed. Mrs. O'Brien asked who would maintain the new road. Administrator Leitch advised that it would be a public road and that the Town would maintain it. Mrs. O'Brien asked what steps were being taken to ensure that the clean waters will not be polluted by the runoff of the sanded and salted roads, that the planned fill on the brooks banks will not seep into the brook, and that the habitat for wildlife will not be broken up. Administrator Leitch advised that the use of materials other than salt to treat the roads is being explored and, also that the selection of a covered wood bridge was specifically to address environmental concerns. Mr. Winereb stated that, with regard to storm water, DEM has to adhere to the latest DEP storm water guidelines. He said we don't want to be disposing of contaminated storm water into Pecks Brook. Mrs. O'Brien said that she understands that there are two rare species in Pecks Brook: the spring salamander and the Appalachian brook crayfish, both of which need cool, clear water. She said there is also a scouring rush, also know as a dwarf horsetail, above which the canopy cannot be changed nor the plant disturbed. She wanted to know what considerations have been given to these species. Administrator Leitch said that the elevation of the covered bridge and the location of the abutments were designed so that there will be virtually no impacts on the water resource and the banks. Also the cover over the bridge will reduce winter maintenance and reduce salts, sands or other material on the bridge, which might seep into the brook. Mr. Winereb said that the road and bridge were designed not to be depositing storm water into the brook and, therefore, it is their position that the species that reside in the brook would not be affected by the development of the road. Mrs. O'Brien asked about the plant and Mr. Winereb stated that he was not familiar with that plant. Mrs. O'Brien said that, according to Pam Weatherbee, the canopy cannot be changed over it and the plant cannot be disturbed. She said they were concerned because the plant was in that area. Mrs. O'Brien then asked if the Berkshire Regional Planning Commission (BRPC) has to approve of this road? Administrator Leitch stated that the BRPC does comment to MEPA as part of the review process but they are not involved with regard to permitting of the road. Mrs. O'Brien then asked if there were email addresses that people could send questions or concerns to and Administrator Leitch said

yes, the email addresses are listed on the Town of Adams Internet site. Administrator Leitch advised that any comments received tonight would be documented in the minutes and would accompany the application.

Steve Blazejewski, resident of Adams all his life, said that he was here because this was a big road. He said it is a 40-ft wide, two-lane road. Administrator Leitch stated that the right-of-way may be 40-ft but the paving would be about 18 feet. Mr. Blazejewski said that, if the covered bridge is for public safety, then quite a bit of strength would have to be built into it to hold fire trucks. He wanted to know if the actual structural workings of the bridge have been really looked at. He asked how far along the project was and how well it was financed. He also asked what happens if this project has a problem financing itself and the Town ends up with a bridge or an extra road that it doesn't need. He said he hopes the town fathers take all this into consideration. Administrator Leitch advised that there were some conceptual drawings of the bridge available for review but cautioned that the dimensions of the bridge had been reduced since the plan was prepared. He said the plan shows a covered sidewalk on both sides and one of those sidewalks has been eliminated.

Julie Sniezek, resident of Adams her entire life, advised that she and her husband are trying to raise a family in this town. She said she just wanted to express their complete and 100% support of this project and every aspect of it, including this road. She said she works in Northampton but makes the commute everyday because she wants to live in Adams. She said in some respects the Town seems to be going down hill and she thinks that any positive steps that can be done in this town needs to be done. She said there are not a lot of young families living in this Town. She said we need to encourage them to stay and we need to do something like this to get them to stay here. On behalf of herself, her husband, her parents and in-laws, she said they are all absolutely 100% in favor of this project and this road.

Earl Kelly, resident of Adams all his life, said that he was at the beginning of the Greylock Glen. He said they put in many hours and went through many heartaches. He said this project has gone down the beaten path and he doesn't think it can be beaten anymore. He said we have to do something and he endorses this project whole-heartedly.

Paul Hutchinson, Town Clerk in Adams and a member of the Greylock Glen Advisory Committee since 1986, said that we need our people to stay here and we need to give them a reason to stay and opportunity to stay for. He said we need this project now maybe more than we did in 1986. He said that when Governor Dukakis and the legislature enacted Chapter 676, the Governor put an emergency preamble on it, which makes it affective immediately. Immediately 16 years ago and we are still here arguing over bridges and tree frogs. He asked the Board to move quickly with this project and endorse the PWED grant application because we need this project economically.

Tony Cafaro, of Highland Avenue, said he supports this application for the road and he supports it on environmental reasons. The environment that he is speaking of is the local environment for people who live near the project. He thinks this proposal will

significantly reduce the impact of traffic that occurs within the site. He said he urges the Board to support it.

John Trimarchi, resident of Adams and business owner, said he feels that something done properly up there could give opportunities that people are looking for. He said if the Bassett Brook Road was thrown out of the plan due to environmental impacts, it doesn't seem like this road would have any less environmental impacts. Mr. Winereb stated that the Bassett Brook proposal paralleled Bassett Brook, which meant that it was in the river front area for a very long stretch. The riverfront is now a protected resource under state law so the impacts within that important river front area were very substantial. Bassett Brook also contributes to the Town's water supply. He said they realized that they were in a very special resource area in Bassett Brook, which is why they very quickly abandoned it. With Pecks Brook, though we are crossing the riverfront, it's only for 400 ft out of the 4,500 ft that we are proposing the connector road to be. Mr. Winereb stated that they are trying to span the resource area without touching down within it. Mr. Trimarchi stated that in 1985 the project was defined as something to help the Town economically and be environmentally sensitive and exercise sustainable techniques. He said he thinks the project has lost sight of that goal under the influence of lets just do something up there quickly instead of rejoicing the environment of the Greylock atmosphere and the fields, and woods and rivers. This has been wiped over by roads and houses and some other elements such as a golf course. He said it seems like we could gain the same opportunities, if not better, for the people in Adams if the project was written on no housing, no roads and an environmental education center that showed off the surrounding environment instead of wiping it out. He said with a smaller scale project, the opportunities become more valuable.

Nancy Nylen, of CET, said this is a good opportunity to raise the discussion of sustainability. She said balance is really what sustainability is all about, balancing environmental concerns and social concerns; concerns for individuals and for our economy. She said what should be thought about as the project goes forward and the application goes forward, is what the timing might be – at what point would the road go in and become necessary. She said another thing to think about is the scale of the project so that it is in keeping with the character of the land and doesn't change the landscape. She said it would be very important to think about how big it is and then how it is managed and operated so that the impacts are lessened as time goes on. Also, what kind of traffic is allowed or encouraged on the property so that it maintains the character it has now. Administrator Leitch advised that the application considers this part of Phase I of construction so it would occur with the first phase of developments. Ms. Nylen asked if there were any certain specifications that it needs to meet in terms of road widths – Administrator Leitch said that still could be changed and we would be, judging from public comment, evaluating the merits of the widths and paving materials. He said so far the Planning and Zoning issues that he has heard of stated that it really needs to serve public safety equipment but he still thinks there is some room for design modifications. She said that, if everyone stays involved at what ever level of interest they have, it would help to shape the character of the road to have the least impact possible.

Al Coury, resident of Adams, said that if nothing is done with this project, change could be a detriment to the town. If we do it, then the change will be positive to the Town and to the surrounding communities, which have been progressive in their nature and we haven't been that progressive, not because we haven't tried but because it just hasn't happened. He said if this project happens, which he is totally and fully in support of, he thinks it's the start of something the towns people will be very proud to be a part of this community. He said as far as the objections go, we all have to live with some degree of nuisance with our neighbors but the nuisance that the project will create for people is minor because of the checks and balances that are implemented by the permitting process and the environmental people you have to answer to. He said he is fully and totally in support of the project.

Stan Kopala, Adams resident for most of his life, said he spent a lot of time in the Gould area. He said a lot of people think it is a real nice area, which it is, DEM did a lot improvements but he said people should look near the maintenance building and see what has happened. He said it is a disaster. He said 4-wheel trucks have gone there and you can't even walk there anymore. He said look in the little trails there is nothing but rubbish, furniture, shingles, etc. He said we have to move forward. He said, if we sit back and let this land go for another 10 years, we would have nothing but a landfill up there. He said volunteers are restoring the Thunderbolt and are planning to bring back the Thunderbolt ski trail to the days like it used to be. He said it would be nice if this corresponded with the Glen. He said he would like to see the Thunderbolt and the Glen get back to what it was and put us right on the map.

Chairman MacDonald then opened the Public Hearing to the Board for their comments. Member Haddad thanked everyone for coming to the hearing He said he has lived in Adams most of his life and his parents owned and operated two restaurants in Adams. He said there were 14,000 people here and the Town was really bustling. He said when he went to the Glen it was all pasturelands, homes and farms. He said the mountain has always been a real part of this community. He said the support of this community for events that could have gone on that mountain has always been close to unanimous. He said we are changing and our population is dropping. He said there are many fine people that live in this community and many that want to live in this community. He said the recipients we have been getting are not what we want to see come into our town and it is not the town it used to be. He said we need to make some changes. He said the project has been redefined and is more environmentally sound than any other project. He said there are fewer roads up there than any other project proposed. He said Adams has to have a stimulus and he thinks the Glen project will be that stimulus. He said the mountain would be more protected today under this act than it ever was before. Mr. Haddad said that, without the support of the community, the town would not have gone along with the state in taking the land from the bank under Eminent Domain. The project that was promised to us and what it was going to do for us is why this community said yes. Mr. Haddad said he is very well in favor of this as a Selectmen and as a business owner in this town. He said the majority of this community says yes, it is time to march forward and close the ranks, as well as protect the concerns that were brought forward tonight.

Member Wilk thanked everyone for coming. She said that no one wants to put something up on that mountain "just to do something". She said this Board has been very concerned about the environment as everyone else has. She said she is very excited about this project. She said this project is going to be good for the Town of Adams and we should all support it.

Member Dean said he has been involved in this project for 30 years and this is one of the best plans of all of the plans we've seen. He said he thinks the project should go forward.

Member Driscoll said there is a couple of reasons this should go forward. First, he said the Board made a promise to the people on West Mountain Road that we would try to alleviate the traffic problems. He said most of the traffic would be on Gould Road. Second, he said we need to get emergency vehicles up there for public safety. Member Driscoll said he supports this 100%.

Chairman MacDonald said the issue here is the 21st Century. He said we are now coming to a challenge. He said if you look back to the turn of the previous century, this was one of the fastest growing communities in the United States. He said we had more money, more jobs, and more production going on in the first 50 years in the new century than any other part of this country. He said now is the time for our rebirth. He said that on January 1st, the fire departments and the state got together and had a display of fireworks on top of the mountain that people saw for miles. He said it was a beautiful expression of what this community is about. He said now it comes down to the people's choice and, the people of Adams have said all along that it is time to do this. We are willing to do whatever we have to do to break ground on the 10th of April.

Member Wilk made a motion to adopt a resolution to file the PWED Application for the Gould Road Connector Project – seconded by Member Driscoll – passed.

Member Wilk made a motion that we designate the Town's Community Development office to administer the grant – seconded by Member Driscoll – passed.

Member Driscoll made a motion to close the public hearing – seconded by Member Dean – passed.

Appendix E

409 Massachusetts Avenue, Suite 202
Acton, MA 01720
978-263-2254
FAX 978-263-8141

Wetlands & Wildlife, Inc.

Memorandum

To: MA DEM/Project Team **From:** Marshall W. Dennis

Date: January 28, 2000

Re: Greylock Center – Wetland/Wildlife Habitat Evaluation

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☒ **FYI**

Introduction

The Greylock Center property contains an extensive network of perennial and intermittent streams, as well as several ponds primarily located within the central portion of the site (Greylock Glen). Throughout the site planning process, efforts have focused on avoiding/minimizing both direct and indirect impacts to this surface water network, primarily by maximizing the distance between proposed development activities and surface waters onsite. With respect to actual building construction, as well as the proposed golf course and infrastructure improvements, only in two instances (i.e. the construction of golf holes 3/6 and 7/9) are construction activities proposed immediately proximate to any existing surface water feature.

The distribution and dendritic nature of stream systems on the Greylock Center property, however, precluded the total avoidance of these resource areas primarily with respect to siting of the proposed multi-use trail system. In an effort to provide user access throughout the property and enable trail user exposure to the diverse natural features exhibited onsite, it was necessary to site waterway/wetland trail crossings at selected locations.

Collectively, 44 potential waterway/wetland impact areas have been identified. Of this total, 35 sites are associated with the proposed multi-use trail system, 5 sites are associated with the proposed golf course, and 3 sites are associated with construction/maintenance access. In the latter instance, 2 of the 3 sites will become part of the multi-use trail system following construction. The final site is associated with the bridging of Pecks Brook by the proposed Connector Road.

From a regulatory perspective, the MA Wetlands Protection Act (MA WPA) regulations require the conduct of wildlife habitat evaluations for activities resulting in the alteration of certain resource areas above a specified threshold. With respect to

the proposed Greylock Center project, only bank resources may be affected beyond the stated threshold. As set forth at 310 CMR 10.54(4)(a)5, activities resulting in bank alterations "up to 10% or 50 feet (whichever is less) of the length of bank found to be significant to wildlife habitat shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60 [Wildlife Habitat Evaluations]."

At a meeting held 9 August 1999 at the MA Department of Environmental Protection Western Regional Office (MA DEPWERO), MA DEP/WERO indicated that bank shading may be considered a resource alteration. In this event, wildlife habitat evaluations would be required if shade-related effects exceeded the bank impact threshold referenced in the regulations. Information regarding impacts to land under water also was requested by MA DEP/WERO.

In light of the above, field investigations were implemented to determine the extent of both project-related impacts to banks and land under water associated with proposed resource crossings. Impacts to vegetated wetlands also were assessed.

Methodology

Two types of waterway/wetland impacts are associated with the Greylock Center project, i.e. resource crossings in conjunction with the proposed multi-use trail and golf cart systems, and clearing to accommodate golf holes and provide adequate lines of site. For the most part, crossings will be accomplished by bridging of the resources. Only at two locations (Crossings 5a and 5c) involving the widening of an existing trail will direct wetland impacts result from trail construction (see Attachment A).

Field investigations to determine waterway/wetland impacts relative to each of these impact categories were conducted during May, June, October and December, 1999. Based upon these field investigations, proposed activities at 10 of the 44 potential waterway/wetland impact areas will not result in any resource impacts. These sites include potential impact areas 1, 12, 13, 14, 16, 16a, 16b, 16c, 17 and 34. The absence of resource impacts is due to the fact that, at these locations, existing roads/trails of sufficient dimensions are available to accommodate proposed multi-use trails and golf cart paths. Of the remaining 34 sites, 23 sites are associated with multi-use trail waterway/wetland crossings and 1 site with maintenance access. At each of these locations, new resource crossings are to be provided. The final 10 potential wetland resource impact areas are limited to vegetated wetlands, and include sites 5a, 9, 10, 16d, 49, 50, 55, 59, 60 and 62.

Locations at which field investigations documented the occurrence of resource impacts, including either direct impacts due to wetland clearing/filling or indirect

shading effects, entailed each of the 24 waterway/wetland crossings and 9 of the 10 vegetated wetland crossings. For these sites, calculations were conducted to determine the extent of these impacts, including impacts to banks, land under water and vegetated wetlands.

It should be noted that, after identifying a potential waterway/wetland impact area in the field, alternative locations proximate to the identified location were reviewed to identify the location where resource impacts would be avoided/minimized. Once identified, the selected location was flagged and measurements were taken to determine the area of impact.

With respect to banks, the impact in terms of linear feet (LF) was determined by multiplying the cross-sectional width of the proposed activity (i.e. bridge construction) by 2 to account for both sides of the stream. The area of bank impact in square feet (SF) was determined by doubling the product obtained by multiplying the cross-sectional width of the bridge crossing by the height of the bank, again to account for both sides of the stream. Impacts to land under water were obtained by multiplying the cross-sectional width of the proposed activity (i.e. bridge construction) by the average width of the stream channel. Lastly, impacts to vegetated wetlands (in SF) primarily were determined by multiplying the cross-sectional width of the proposed activity (i.e. trail/bridge construction) by both the length of wetland to be affected and the percentage of vegetative cover. In instances where the extent of vegetation was sparse, however, individual trees/saplings/shrubs were identified and the aerial extent of vegetative pruning/removal determined by specimen-specific measurements and cover estimates.

Findings

The calculations noted above indicate that project-related activities at the 24 crossing sites exhibiting bank and land under water will not result in any direct impacts to either resource. This is because each of these crossings will be bridged, with any requisite abutments and pilings being located outside these resource areas. Accordingly, other than potential construction-related impacts to be mitigated via the implementation of soil erosion and sediment controls, the only potential impact to banks and land under water will be associated with shade-related effects. In this regard, approximately 784 LF of bank totaling approximately 564 SF will be shaded, at least to some degree, by proposed bridge structures, as will approximately 2,364 SF of land under water.

As the Summary of Estimated Wetland Impacts provided in Attachment A indicates, vegetated wetland impacts will occur at 26 locations, totaling approximately 4,675 SF. Of this total, approximately 4,100 SF involves vegetative clearing and, therefore, no loss of vegetated wetland resources. Vegetated wetland losses only will be associated with two locations (Crossings 5a and 5c) where trail widening will result in impacts to approximately 575 SF of vegetated wetland. Regardless, wetland

creation activities at a replacement ratio of approximately 2:5 will compensate for all impacts to vegetated wetlands.

With specific respect to Crossing 5a, however, it should be noted that the actual area of delineated wetland to be disturbed totals approximately 2,045 SF. This includes 450 SF of currently vegetated wetland and 1,595 SF of an existing dirt road that was incorporated into the wetland delineation and approved by the Adams Conservation Commission.

While included in the delineation as a bordering vegetated wetland, the dirt road does not play a role relative to the interests of the MA WPA for which bordering vegetated wetlands are presumed significant. These interests include the protection of public and private water supply, the protection of groundwater supply, flood control, storm damage prevention, the prevention of pollution, the protection of fisheries, and the protection of wildlife habitat

The road, itself, is not vegetated and, for much of its length, exhibits deep ruts caused by off-road vehicles. The substrate within the road's alignment, effectively, is impervious, as evidenced by the occurrence of standing water in the ruts following rainfall events and for extended periods thereafter. Due primarily to its impervious nature, this roadway wetland does not function with respect to public/private water supply, groundwater supply or pollution prevention, with this latter function being further negated by the absence of vegetation. Because of its landscape position on a slope, it also does not function in terms of flood control or storm damage prevention. The absence of surface water suitable for fish and the lack of vegetation preclude its functioning as fish or wildlife habitat, as well.

Accordingly, since the existing roadway wetland does not play a role relative to the interests of the MA WPA, its area (1,595 SF) was excluded from the wetland impact calculation associated with trail improvements at this location.

Discussion

As the above findings confirm, only bank resources may be affected beyond the regulatory threshold. Consequently, wildlife habitat evaluations were conducted at representative locations where bank-related impacts (i.e. shading due to bridge construction) would occur. These evaluations were conducted in accordance with MA WPA regulations set forth at 310 CMR 10.60, as well as MA DEP Wetlands Program Policy 88-1 and Wetlands Wildlife Advisory #2.

In accordance with the regulations and associated Policy/Advisory, data pertaining to banks at the selected locations were collected for subsequent evaluation purposes. Specifically, data were collected with respect to topography, soil structure, plant community composition and structure, and adjacent habitat types. These data,

collected at 8 of the 24 proposed bridge locations exhibiting bank resources, are provided in Attachment B.

Since bank resources will not be physically disturbed by proposed activities, topographic and soil conditions will remain unchanged. Consequently, wildlife-related functions presently performed by banks at each of the proposed crossing sites will not be adversely affected. At one location (Crossing 5c), in fact, bank resources will be increased due to the removal of an existing culvert and the installation of a bridge. Additionally, all bridge heights at each waterway/wetland crossing will be high enough to allow the continued movement of aquatic species between upstream and downstream locations.

With respect to plant community composition and structure, the need to clear/prune vegetation was avoided/minimized, to a large extent, by the use of existing roads/trails. For instance, vegetative clearing associated with any one waterway/bank crossing location will result, at most, in the loss of vegetative cover over a surface area of only approximately 500 SF. This will occur at Crossing 18, in conjunction with construction of the Connector Road. Vegetative cover will be reduced by approximately 300 SF at Crossing 57. At all remaining waterway/bank crossing locations, vegetative cover will be reduced by 150 SF or less, with no clearing being required at 7 of the 24 proposed waterway/bank crossings. These localized negligible losses in vegetative cover will not adversely affect wildlife resources, particularly in light of the extensive coverage provided by both wetland and upland vegetation to remain undisturbed adjacent to each waterway/bank crossing location.

Moreover, it is important to note that the above-referenced reductions in vegetative cover primarily refer to vegetated wetlands, since actual bank vegetation characteristically is sparse. At many waterway/bank crossings, in fact, vegetative clearing primarily is confined to tree branches overhanging the proposed trail route, rather than trees/saplings/shrubs actually rooted within the trail alignment. Consequently, bridge placement will not significantly affect the extent of bank vegetation due either to the bridge's direct physical presence or indirectly due to shading.

In summary, the proposed Greylock Center project will not adversely affect bank-related wildlife habitat.

Attachment A

Summary of Estimated Wetland Impacts

SUMMARY OF ESTIMATED WETLAND IMPACTS
GREYLOCK CENTER
ADAMS, MA

PHASE I

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
TRAIL SYSTEM						
1	Existing Crossing over Thiel Road w/Culvert to Remain	P (Hoxie Brook)	N/A	N/A	N/A	None
2	Existing Trail Crossing - Wood Bridge w/Headwalls*; Deck to be Replaced	P (Hoxie Brook)	6/27	S/S	Clearing	75
3	Existing Trail Crossing - Wood Bridge w/Headwalls*; Deck to be Replaced; Combined Trail/Cart Path	P (Hoxie Brook)	6/22	S/S	Clearing	25
4	Existing Road/Trail Crossing through Wetland to be Bridged	P	4/24	F	Clearing (Assumes 14' wide X-section)	25
5	Existing Road/Trail Crossing through Wetland to be Bridged	I	4/45	F	Piles (Assumes 14' wide X-section)	25
5a	Existing Road/Trail Crossing through Wetland to be Widened	N/A	N/A	F-EM	Clearing/Fill (Assumes 14' wide X-section)	450**

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
5b	To be Bridged	I	8/23	F	Clearing	75
5c	Existing Road/Trail Crossing w/Adjacent Wetlands - Culvert* to be Removed and Channel to be Bridged	I	3/5 (Channel only)	F-S/S	Clearing/Fill (Assumes 14' wide X-section)	125
9	To be Bridged	N/A	4/76	S/S	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	250
10	To be Bridged - Combined Trail/Cart Path	N/A	4/47	EM-S/S	Clearing/Piles	300
12	Existing Road/Trail Crossing w/Culvert* to Remain	P	N/A	N/A	N/A	None
15	Existing Trail Crossing - Wood Bridge w/Headwalls*; Deck to be Replaced	P	6/18	S/S-EM	Clearing	25
16a	Existing Road/Trail w/Adjacent Wetlands	N/A	N/A	EM	N/A	None
16b	Existing Road/Trail Crossing w/Adjacent Wetlands and Culvert* to Remain - Combined Trail/Cart Path	I	N/A	F-S/S-EM	N/A	None

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
16c	Existing Road/Trail Crossing w/Adjacent Wetlands and Culvert* to Remain	I	N/A	EM-S/S	N/A (Assumes 8' wide Class III trail/bridge)	None
18	To be Constructed in conjunction W/Pecks Brook Bridge	P (Pecks Brook)	25/104	F	Clearing	500
19	Existing Headwalls w/o Deck* to be Bridged	P (Pecks Brook)	4/20	S/S-EM	Clearing	125
22	To be Bridged	P	4/18	F	Clearing	75
23	To be Bridged	P	30/75	F	N/A	None
49	To be Bridged	N/A	4/160	SS-EM	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	125
50	To be Bridged	N/A	4/50	EM	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	50
57	To be Bridged	P (Hoxie Brook)	4/45	F	Clearing/Piles	300

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
59	To be Bridged	N/A	4/180	EM	Clearing/Piles (Assumes 8' wide Class III trail/bridge)	125
60	Existing Trail Crossing through Wetland to be Bridged – Combined Trail/Cart Path	N/A	3/15	EM	N/A	None
63	To be Bridged	I	3/10	F	N/A	None
GOLF COURSE						
16d	To be Cleared for Fairway	I	N/A	F	Clearing	600
	Cart Path – Existing Trail Crossing w/Culvert to Remain	I	N/A	F	N/A	None
55	To be Cleared for Line of Sight	I	N/A	SS-EM	Clearing	750
62	To be Cleared for Line of Sight	I	N/A	F	Clearing	150

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Length Over Waterway/ Wetland (ft)†	Bridge Height/ Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
GOLF CART ROUTING						
13	Existing Crossing over Gould Road w/Culvert	P	N/A	N/A	N/A	None
14	Existing Crossing over Gould Road w/Culvert	N/A	N/A	N/A	N/A	None
CONSTRUCTION/MAINTENANCE ACCESS						
22a	Existing Trail Crossing through Wetland To be Bridged – To Become Phase II Trail	P	4/15	F-EM	Clearing	100
34	Existing Road/Trail Crossing w/Culvert* to Remain - To Become Phase I Trail for Winter Use Only	P	N/A	N/A	N/A	None
56	To be Bridged	P (Hoxie Brook)	8/30	F	Clearing	125

* Requires verification of existing headwall/culvert size and integrity

** Assumes wetland-related presumptions of significance are overcome for existing dirt road/trail totaling 1,595 ft^2

† All bridge heights/lengths are approximate

†† F = Forest; S/S = Scrub/Shrub; EM = Emergent

††† Unless noted otherwise, all impact areas are based upon a trail cross section width of 16'

PHASE I WETLAND IMPACT TOTALS

MULTI-USE TRAIL SYSTEM	2,675 SF
GOLF COURSE	1,500 SF
GOLF CART ROUTING	None
CONSTRUCTION/MAINTENANCE ACCESS	225 SF
PHASE I WETLAND IMPACT SUMMARY	**4,400 SF**

PHASE II

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
TRAIL SYSTEM						
16	Existing Trail Crossing w/Culvert To Remain	P	N/A	N/A	N/A	None
17	Existing Crossing Over Gould Road w/Culvert	P	N/A	N/A	N/A	None
27	Existing Wood Bridge to be Replaced	P	3/10	F	N/A	None
28	Existing Pallet Bridge to be Replaced	P	4/6	F	Clearing	25
29	To be Bridged	P (Pecks Brook)	4/25	F	N/A	None

Crossing Number	Crossing Type	Stream Class [Perennial/ Intermittent (P/I)]	Bridge Height/ Length Over Waterway/ Wetland (ft)†	Vegetative Community Type††	Wetland Impact (Clearing/Piles/ Fill)	Area (ft^2)†††
30	Existing Trail Crossing through Wetland To be Bridged	I	4/31	F	Clearing	150
36	Existing Wood Bridge to be Replaced	P (Pecks Brook)	4/30	F	N/A	None
39	To be Bridged	I	4/12	F	Clearing	50
41	To be Bridged	I	6/35	F	N/A	None
43	To be Bridged	I	5/12	F	Clearing	50
46	To be Bridged	I	10/35	F	N/A	None

PHASE II WETLAND IMPACT TOTALS

MULTI-USE TRAIL SYSTEM	275 SF

PHASE I AND II WETLAND IMPACT SUMMARY

PHASE I	**4,400 ft^2**
PHASE II	**275 ft^2**
TOTAL	**4,675 ft^2**

Revised January 25, 2000

Attachment B

Wildlife Habitat Evaluation Forms - Bank

Wetlands & Wildlife, Inc.

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 28, 1999

BANK

Location: **Wetland/Waterway Crossing #4**

TOPOGRAPHY

Slope *Gradual to Steep* **Aspect** *N/S*
Impact: **Length** *16' x 2' = 32LF* **Height** *0.5'* **Area** *16 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *Trace* Sand *25* Gravel *50* Cobbles *25* Organics *0*

Cavity Abundance

None

Mud Flats/Exposed Areas (size/#)

Approximately 50% of channel exposed/leaf covered

Depth of Soil Horizons to 3'
N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*75*	*Yellow Birch*
Vines	*0*	
Shrubs	*20*	*Elm, Beech*
Herbs/Ground Cover	*20*	*Christmas Fern, Woodfern, Jewelweed*
Leaf Litter	*100% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion	Distribution Pattern (Clumped/Random/Uniform)	Depth of Leaf Litter
Moderate	*Random*	*1"*

Shrub Height (%)		#/dbh of Standing Trees w/Cavities	Cavity Diameter (</> 3')
0-3'	*0*	*None*	*N/A*
3-6'	*100*		
>6'	*0*		

Water Overhung by Branches (%)	Overhanging Branch Height (%)	
75	0-3'	*0*
	3-6'	*0*
	>6'	*100 (Trees Only)*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

Few small branches approx. 0.5 – 2" diameter

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest

Overstory	*Sugar Maple, Yellow Birch, Black Birch, Red Oak, Hemlock*
Understory	*Beech, Sugar Maple, Christmas Fern, Woodfern*

Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: Wetland/Waterway Crossing #4

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 28, 1999

BANK

Location: **Wetland/Waterway Crossing #5b**

TOPOGRAPHY

Slope *Gradual to Moderate* **Aspect** *N/S*
Impact: **Length** *16' x 2' = 32LF* **Height** *0.25 - 0.5'* **Area** *<16 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *0* Sand *10* Gravel *10* Cobbles *80* Organics *0*

Cavity Abundance

None

Mud Flats/Exposed Areas (size/#)

Approximately 50% of channel exposed/leaf covered

Depth of Soil Horizons to 3'

N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*60*	*Black Birch, Sugar Maple, Yellow Birch*
Vines	*0*	
Shrubs	*<5*	*Striped Maple*
Herbs/Ground Cover	*0*	*Christmas Fern, Woodfern, Jewelweed*
Leaf Litter	*100% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion	Distribution Pattern (Clumped/Random/Uniform)	Depth of Leaf Litter
Low	*Random*	*1-2"*

Shrub Height (%)		#/dbh of Standing Trees w/Cavities	Cavity Diameter (</> 3')
0-3'	*0*	*None*	*N/A*
3-6'	*0*		
>6'	*100*		

Water Overhung by Branches (%)	Overhanging Branch Height (%)	
10	0-3'	*0*
	3-6'	*0*
	>6'	*100*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

Few small dead branches to approx. 2" diameter

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest

Overstory	*Sugar Maple, Black Birch, Paper Birch*
Understory	*Beech, Sugar Maple, Paper BirchChristmas Fern, Woodfern*

Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: **Wetland/Waterway Crossing #5b**

Wetlands & Wildlife, Inc.

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 27, 1999

BANK

Location: Wetland/Waterway Crossing #19

TOPOGRAPHY

Slope *Moderate to Steep* **Aspect** *N/S*
Impact: **Length** *16' x 2' = 32LF* **Height** *0.5 – 1.0'* **Area** *<32 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *0* Sand *10* Gravel *40* Cobbles *50* Organics *0*

Cavity Abundance

None

Mud Flats/Exposed Areas (size/#)

< 5% of channel exposed

Depth of Soil Horizons to 3'
N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*10*	*Cottonwood (1)*
Vines	*Trace*	*Wild Grape*
Shrubs	*30*	*Elm, Silky Dogwood, Willow, Black Birch*
Herbs/Ground Cover	*15*	*Tussock Sedge, Horsetail*
Leaf Litter	*40% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion

Low - Moderate

Distribution Pattern (Clumped/Random/Uniform)

Random

Depth of Leaf Litter

1-2"

Shrub Height (%)

0-3' *10*
3-6' *30*
>6' *60*

#/dbh of Standing Trees w/Cavities

None

Cavity Diameter (</> 3')

N/A

Water Overhung by Branches (%)

40

Overhanging Branch Height (%)

0-3' *10*
3-6' *30*
>6' *60*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

Few small branches approx. 0.5" diameter

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest
Overstory *Hemlock, Black Birch, Paper Birch*
Old Field
Staghorn Sumac, Quaking Aspen, Wild Grape, Goldenrod, Milkweed, Wild Madder

Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: **Wetland/Waterway Crossing #19**

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 26, 1999

BANK

Location: **Wetland/Waterway Crossing #22**

TOPOGRAPHY

Slope *Gradual to Steep* **Aspect** *N/S*
Impact: **Length** *16' x 2' = 32LF* **Height** *1.0'* **Area** *32 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *Trace* Sand *15* Gravel *25* Cobbles *60* Organics *0*

Cavity Abundance

None

Mud Flats/Exposed Areas (size/#)

Approximately 25% of channel exposed

Depth of Soil Horizons to 3'
N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*50*	*Sugar Maple*
Vines	*0*	
Shrubs	*5*	*Sugar Maple*
Herbs/Ground Cover	*10*	*Woodfern*
Leaf Litter	*75% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion	Distribution Pattern (Clumped/Random/Uniform)	Depth of Leaf Litter
Moderate	*Random*	*2"*

Shrub Height (%)		#/dbh of Standing Trees w/Cavities	Cavity Diameter (</> 3')
0-3'	*33*	*None*	*N/A*
3-6'	*33*		
>6'	*33*		

Water Overhung by Branches (%)	Overhanging Branch Height (%)	
	0-3'	*0*
25	3-6'	*0*
	>6'	*100*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

None

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest
Overstory *Sugar Maple, Red Oak, Beech, Black Cherry*
Underestory *Striped Maple, Sugar Maple, woodfern*
Old Field
Quaking Aspen, Goldenrod, Milkweed, Raspberry, Sensitive Fern

Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: **Wetland/Waterway Crossing #22**

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 26, 1999

BANK

Location: **Wetland/Waterway Crossing #29**

TOPOGRAPHY

Slope *Gradual to Steep* **Aspect** *E/W*
Impact: **Length** *16' x 2' = 32LF* **Height** *0.5-2' (1.25' Avg.)* **Area** *40 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *0* Sand *5* Gravel *10* Cobbles *85* Organics *0*

Cavity Abundance

None

Mud Flats/Exposed Areas (size/#)

<5% of channel exposed

Depth of Soil Horizons to 3'
N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*40*	*Paper Birch, Bkack Birch, Hemlock*
Vines	*0*	
Shrubs	*<5*	*Striped Maple*
Herbs/Ground Cover	*10*	*Christmas Fern*
Leaf Litter	*100% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion

Moderate

Distribution Pattern (Clumped/Random/Uniform)

Random

Depth of Leaf Litter

2"

Shrub Height (%)

0-3' *0*
3-6' *100*
>6' *0*

#/dbh of Standing Trees w/Cavities

None

Cavity Diameter (</> 3')

N/A

Water Overhung by Branches (%)

0

Overhanging Branch Height (%)

0-3' *0*
3-6' *0*
>6' *100 (Trees Only)*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

None

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest
Overstory *Paper Birch, Yellow Birch, Hemlock, Elm, Large-toothed Aspen*
Underestory *Striped Maple, Sugar Maple, Hemlock*

Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: **Wetland/Waterway Crossing #29**

Wetlands & Wildlife, Inc.

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 26, 1999

BANK

Location: Wetland/Waterway Crossing #36

TOPOGRAPHY

Slope *Moderately Steep to Vertical* **Aspect** *E/W*
Impact: **Length** *16' x 2' = 32LF* **Height** *1-2' (1.5' Avg.)* **Area** *48 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *0* Sand *10* Gravel *10* Cobbles *40* Organics *0*
Boulders *40*

Cavity Abundance

None

Mud Flats/Exposed Areas (size/#)

Approximately 50% of channel exposed

Depth of Soil Horizons to 3'
N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*80*	*Hemlock*
Vines	*0*	
Shrubs	*0*	*Striped Maple (Adjacent Upland)*
Herbs/Ground Cover	*<5*	*Woodfern*
Leaf Litter	*75% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion	Distribution Pattern (Clumped/Random/Uniform)	Depth of Leaf Litter
Low	*Random*	*1"*

Shrub Height (%)		#/dbh of Standing Trees w/Cavities	Cavity Diameter (</> 3')
0-3'	*0*	*None*	*N/A*
3-6'	*0*		
>6'	*0*		

Water Overhung by Branches (%)	Overhanging Branch Height (%)	
0	0-3'	*0*
	3-6'	*0*
	>6'	*0*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

None

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest
Overstory *Yellow Birch, Hemlock, Black Birch, Elm*
Underestory *Striped Maple, Sugar Maple, Woodfern, Goldthread*

Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: **Wetland/Waterway Crossing #36**

Wetlands & Wildlife, Inc.

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 26, 1999

BANK

Location: **Wetland/Waterway Crossing #43**

TOPOGRAPHY

Slope *Moderate* **Aspect** *N/S*
Impact: **Length** *16' x 2' = 32LF* **Height** *0.5'* **Area** *16 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *0* Sand *20* Gravel *30* Cobbles *50* Organics *0*

Cavity Abundance

Few (Small Mammal)

Mud Flats/Exposed Areas (size/#)

None

Depth of Soil Horizons to 3'
N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*50*	*Red Maple*
Vines	*0*	
Shrubs	*20*	*Beech, Black Birch, Striped Maple*
Herbs/Ground Cover	*20*	*Woodfern*
Leaf Litter	*100% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion

Moderate

Distribution Pattern (Clumped/Random/Uniform)

Random

Depth of Leaf Litter

1-2"

Shrub Height (%)

0-3' *0*
3-6' *0*
>6' *100*

#/dbh of Standing Trees w/Cavities

None

Cavity Diameter (</> 3')

N/A

Water Overhung by Branches (%)

15

Overhanging Branch Height (%)

0-3' *0*
3-6' *0*
>6' *100*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

Several dead branches approx. 0.5-2.0" diameter

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest
Overstory *Red Maple, Hemlock, Black Birch*
Underestory *Striped Maple, Sugar Maple, Beech, Black Cherry, Woodfern,*

Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: **Wetland/Waterway Crossing #43**

Wetlands & Wildlife, Inc.

WILDLIFE HABITAT EVALUATION FORM

Project: Greylock Center
Date: October 28, 1999

BANK

Location: **Wetland/Waterway Crossing #57**

TOPOGRAPHY

Slope *Moderate - Steep* **Aspect** *N/S*
Impact: **Length** *16' x 2' = 32LF* **Height** *1'* **Area** *32 SF*

SOIL STRUCTURE

Substrate Composition (%)

Clay *0* Silt *0* Sand *25* Gravel *50* Cobbles *25* Organics *0*

Cavity Abundance

None

Mud Flats/Exposed Areas (size/#)

Approximately 15% of channel covered w/dead log & leaves

Depth of Soil Horizons to 3'
N/A

PLANT COMMUNITY COMPOSITION AND STRUCTURE

	% Cover	Species Composition (>10% of vegetative type)
Trees	*75*	*Sugar Maple, Yellow Birch, Hemlock*
Vines	*0*	
Shrubs	*15*	*Beech, Sugar Maple, Barberry*
Herbs/Ground Cover	*15*	*Horsetail, Christmas Fern*
Leaf Litter	*100% of wetland*	
Aquatics	*0*	

PLANT COMMUNITY COMPOSITION AND STRUCTURE (Cont'd)

Vegetative Interspersion

Moderate

Distribution Pattern (Clumped/Random/Uniform)

Random

Depth of Leaf Litter

1-2"

Shrub Height (%)

0-3' *0*
3-6' *100*
>6' *0*

#/dbh of Standing Trees w/Cavities

None

Cavity Diameter (</> 3')

N/A

Water Overhung by Branches (%)

0

Overhanging Branch Height (%)

0-3' *0*
3-6' *0*
>6' *0*

#/Size of Dead Vegetation Extending into Open Water Suitable for Basking/Perching

Three (3) logs approx. 15" diameter & one (1) branch approx. 2-3" diameter

Identification of Migratory Areas to be Altered

None

ADDITIONAL FEATURES OF PROJECT SITE WHERE OFFSITE REPLICATION IS PROPOSED

Habitat Types <500' from Bank
(Include vegetation, soils and hydrologic characteristics for each habitat type immediately adjacent to Bank)

Upland Forest
Overstory *Beech, Sugar Maple, Hemlock*
Underestory *Beech, Hemlock, Woodfern,*

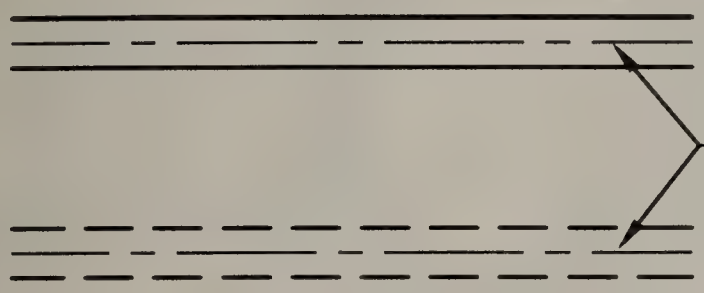
Habitat Types >500' from Bank
(Include dominant vegetative, hydrologic and/or land use type w/average areas of <½ acre, ½ acre – 2 acres or >2 acres)

Same (> 2 acres)

Location: **Wetland/Waterway Crossing #57**

Appendix F

LEGEND



PROPOSED TRAIL

Centerline

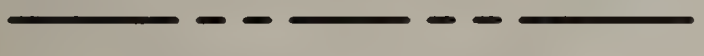
EXISTING TRAIL TO BE IMPROVED



WETLAND



100' WETLAND BUFFER



INTERMITTENT STREAM



PERENNIAL STREAM



200' RIVERFRONT AREA

NOTE:
Crossings that are not illustrated include Phase II Crossings (16, 17, 27, 28, 29, 30, 36, 39, 41, 43, 46), or crossings that have been eliminated (6, 7, 8, 11, 17, 20, 21, 24, 25, 26, 31, 32, 33, 35, 37, 38, 40, 42, 44, 45, 46, 47, 48, 21, 52, 53, 54, 58, 61).

GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

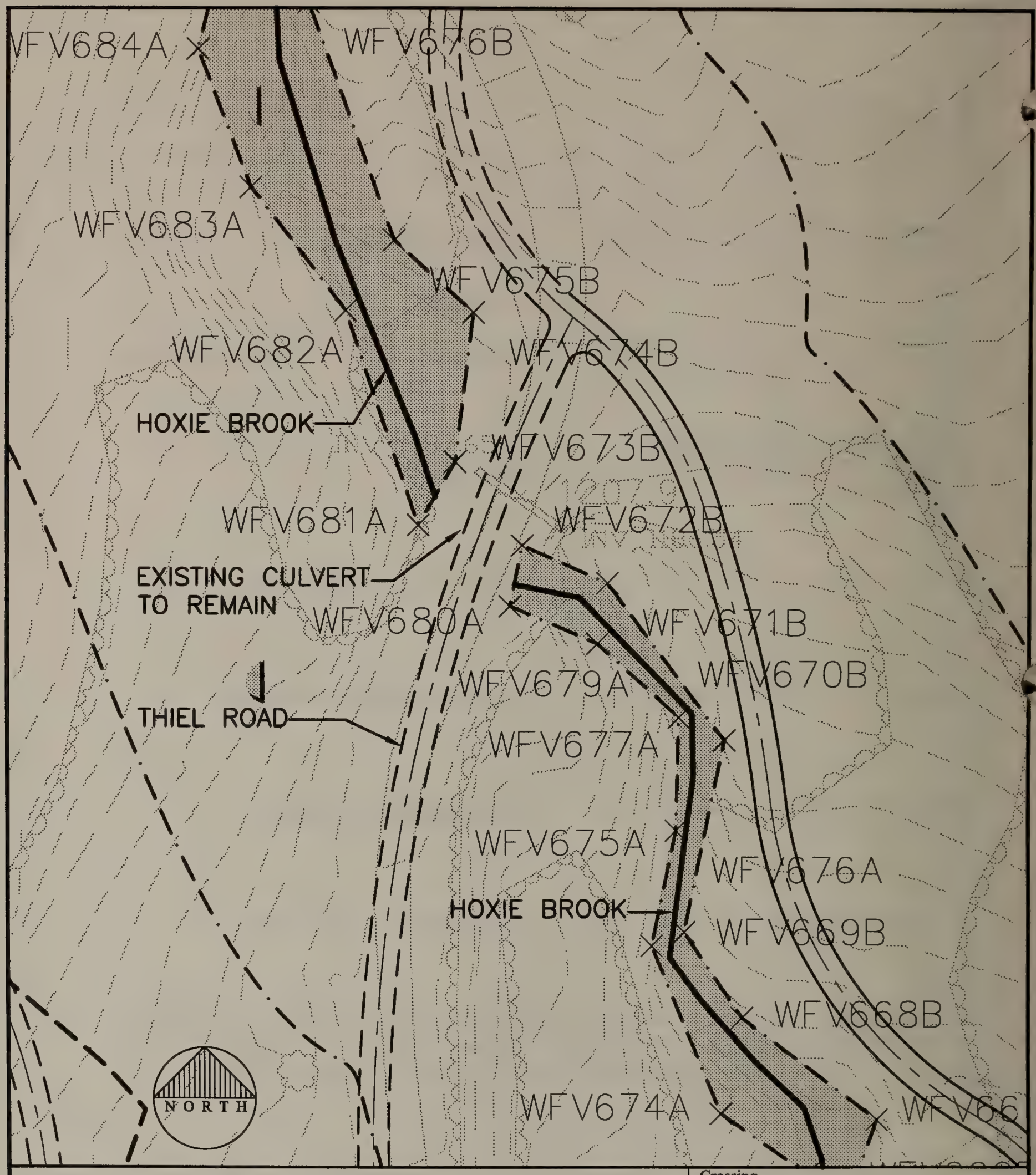
DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

Scale: NTS

Date: January 24, 2000

LEGEND



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

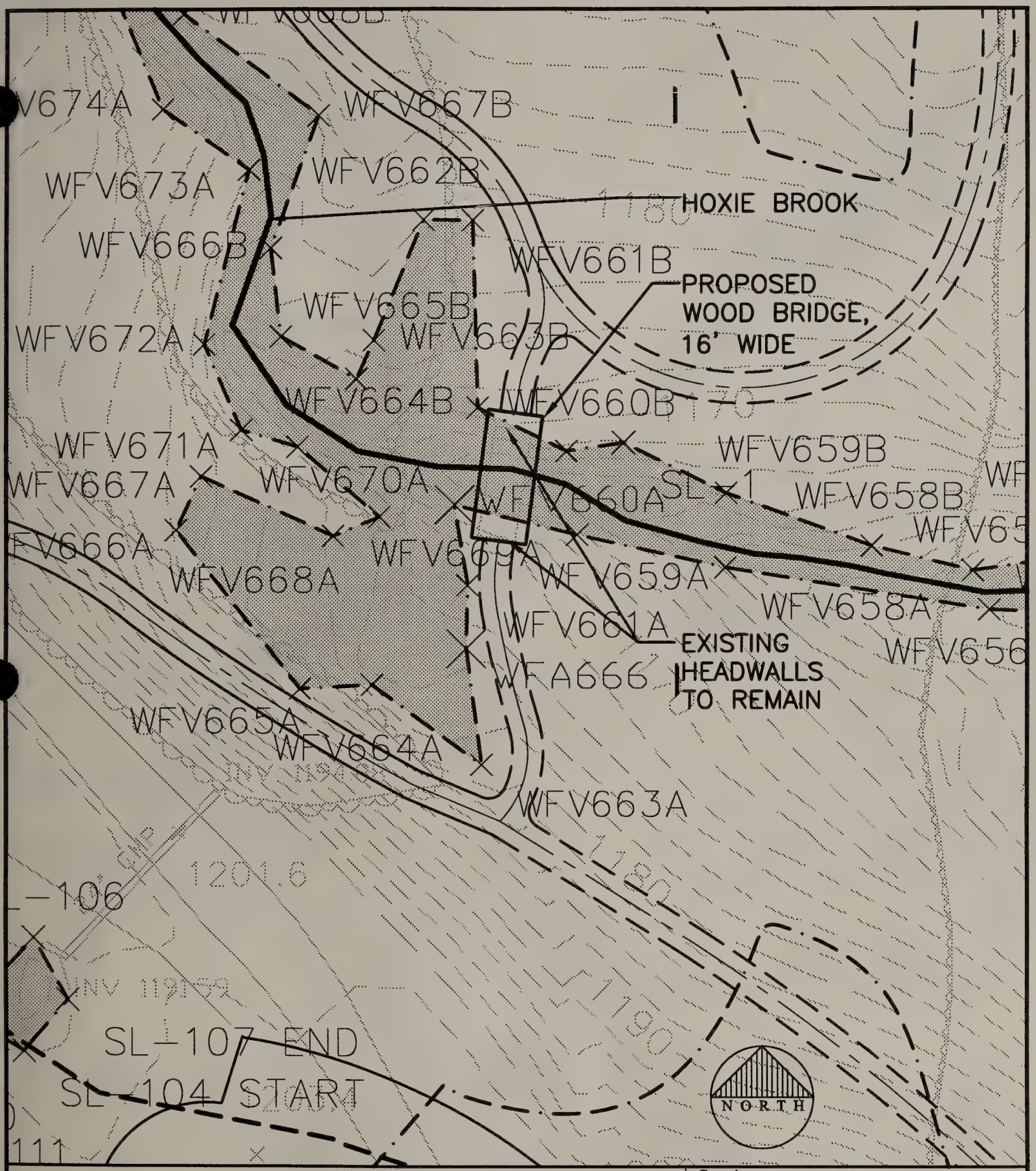
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 1

Crossing Type: Existing crossing over Thiel Road w/ Culvert to Remain



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

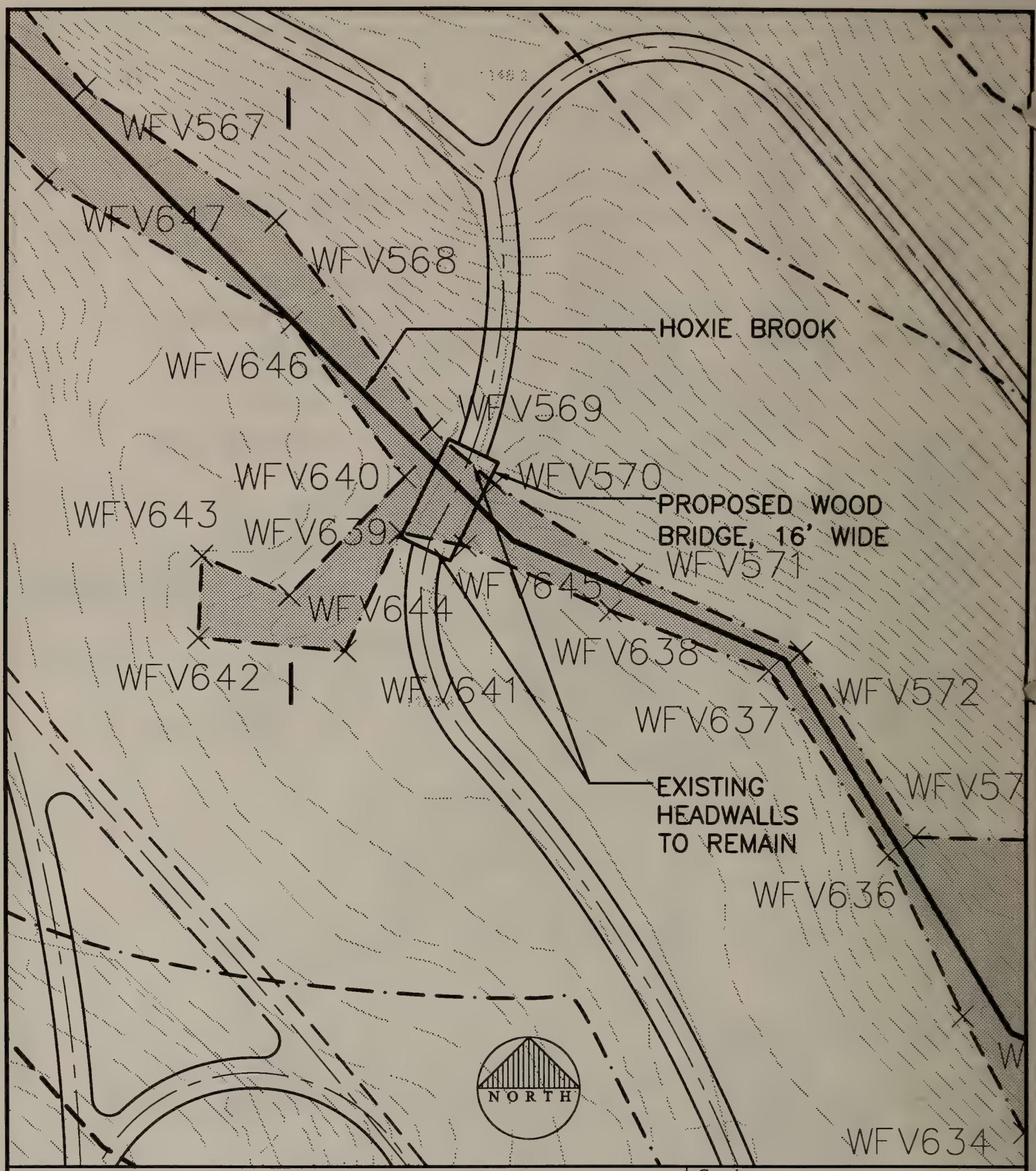
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 2

Crossing Type: Existing Trail Crossing - Wood Bridge with Headwalls; Deck to be Replaced



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

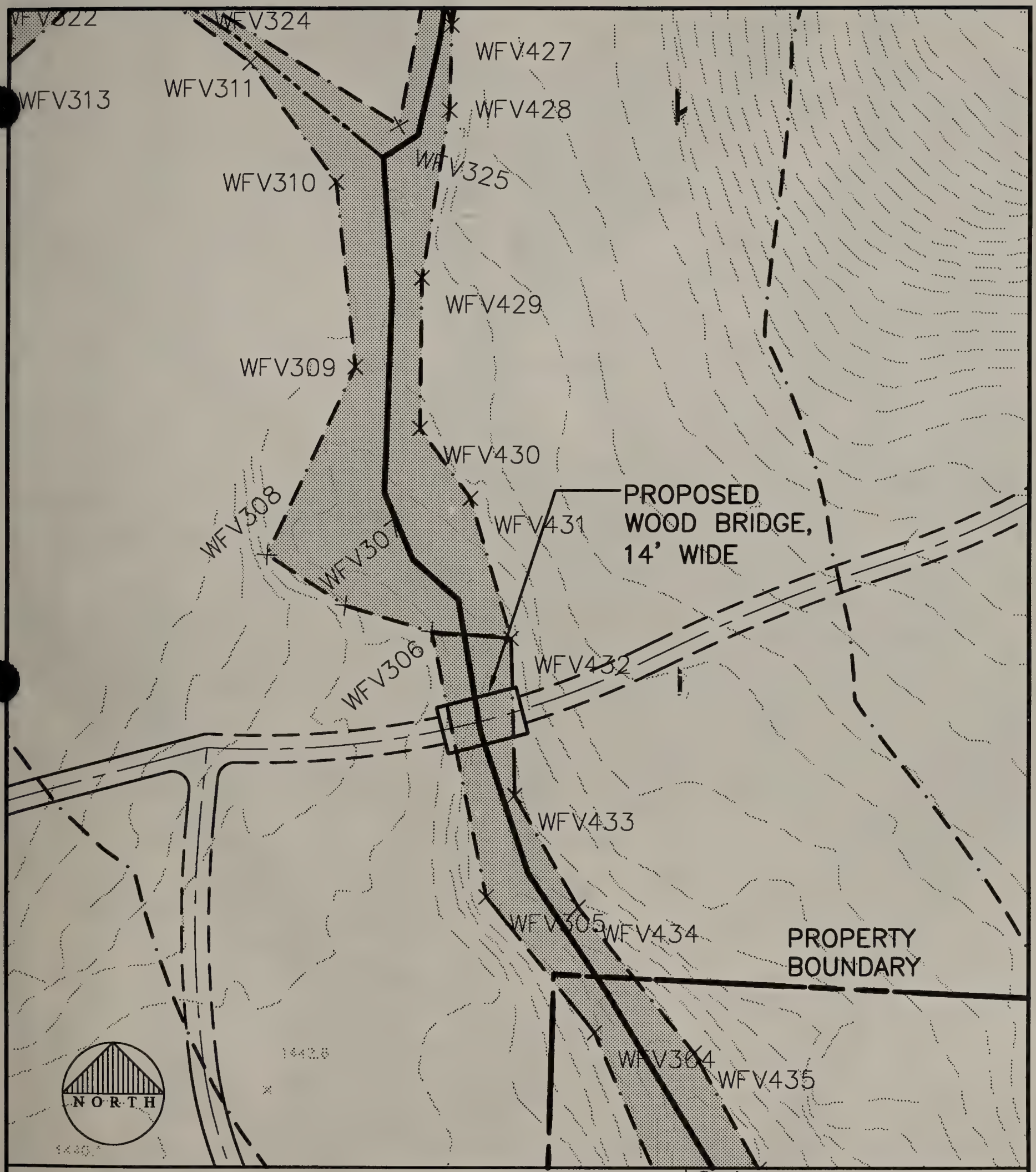
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 3

Crossing Type: Existing Trail Crossing - Wood Bridge w/ Headwalls; Deck to be Replaced; Combined Trail/Cart Path



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

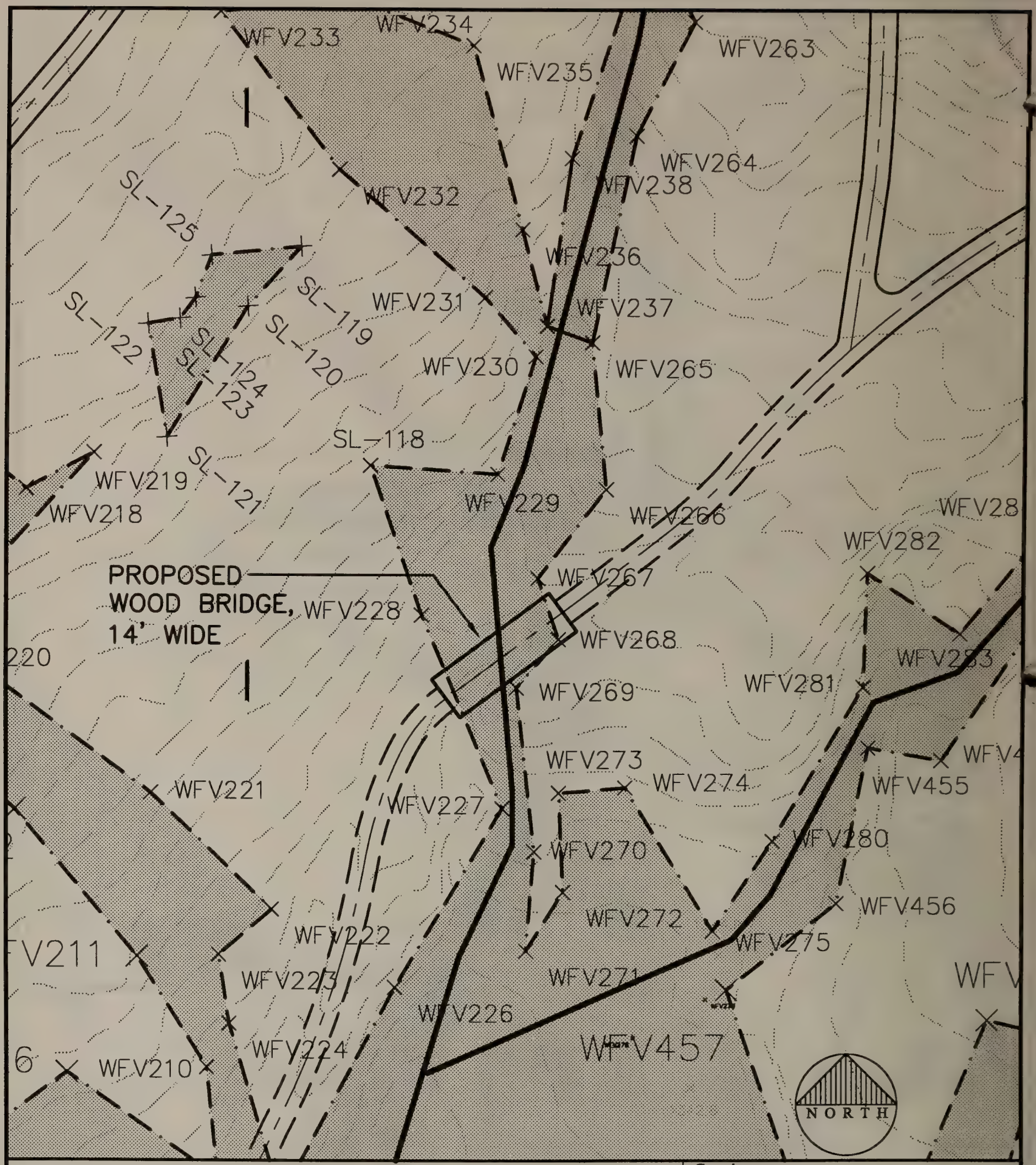
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 4

Crossing Type: Existing Road/Trail Crossing Though Wetland to be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

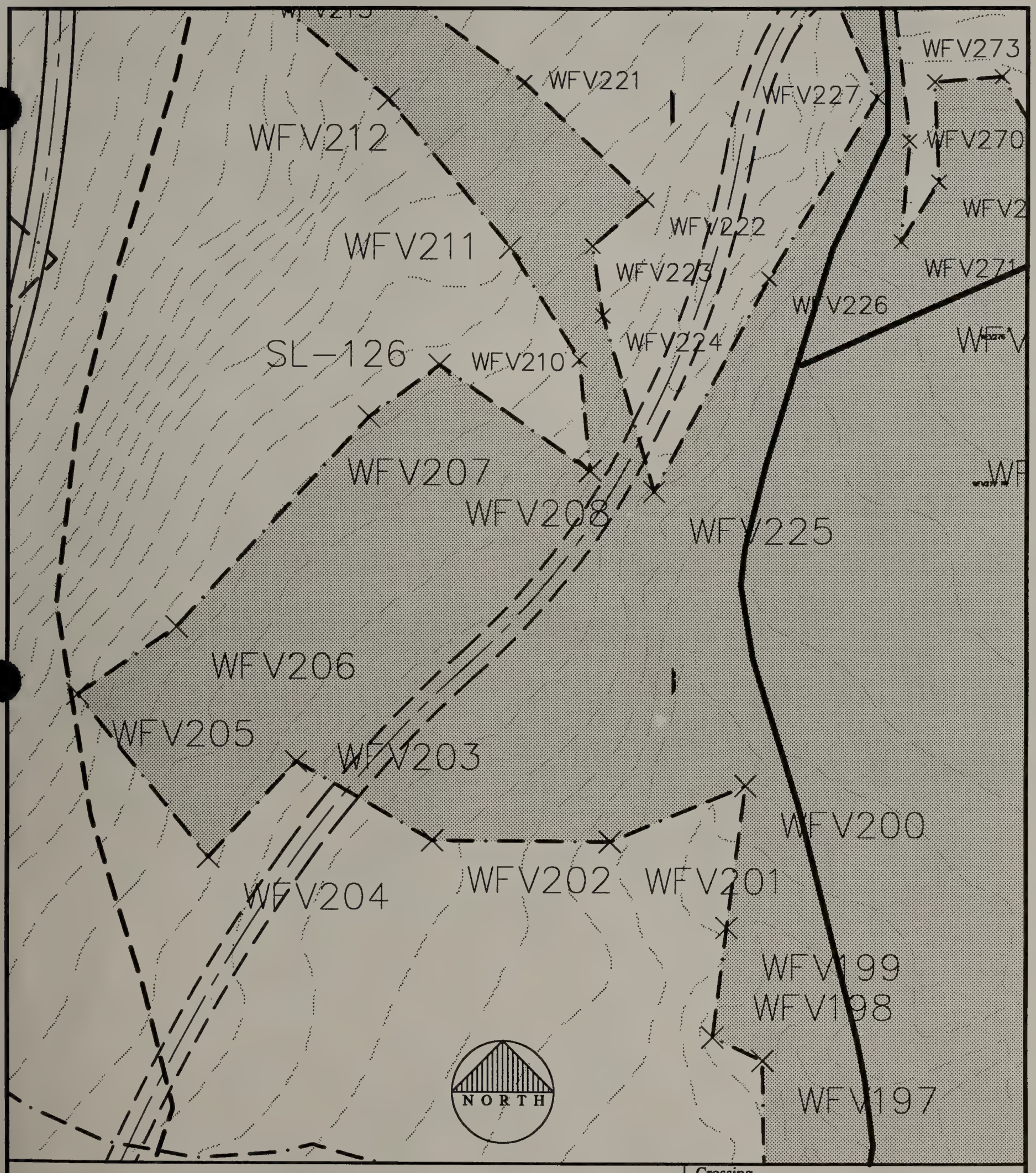
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 5

Crossing Type: Existing Road/Trail Crossing through Wetland to be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

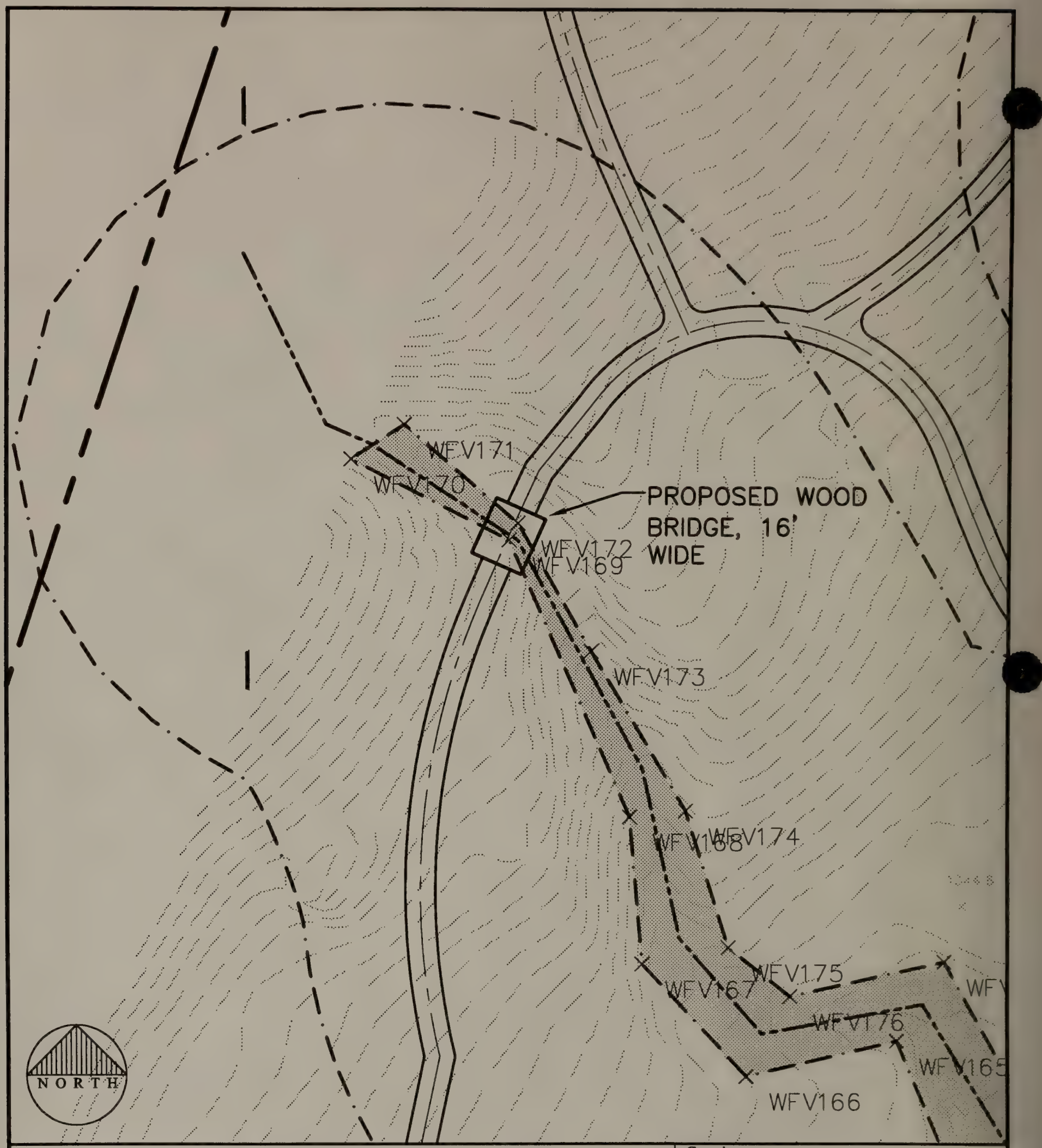
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: **5a**

Crossing Type: Existing Road/ Trail through Wetland to be Widened to 14'



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

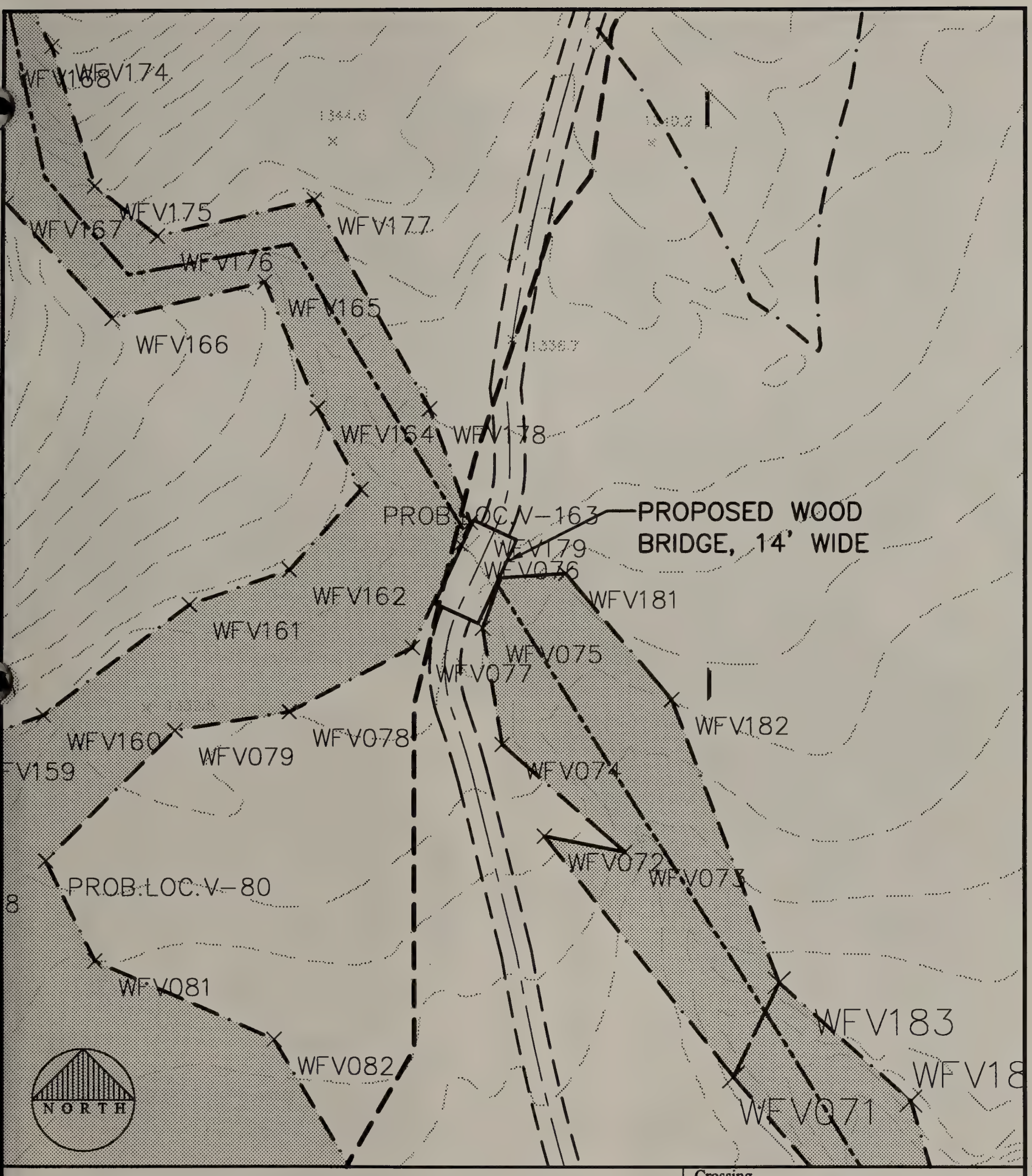
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 5b

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

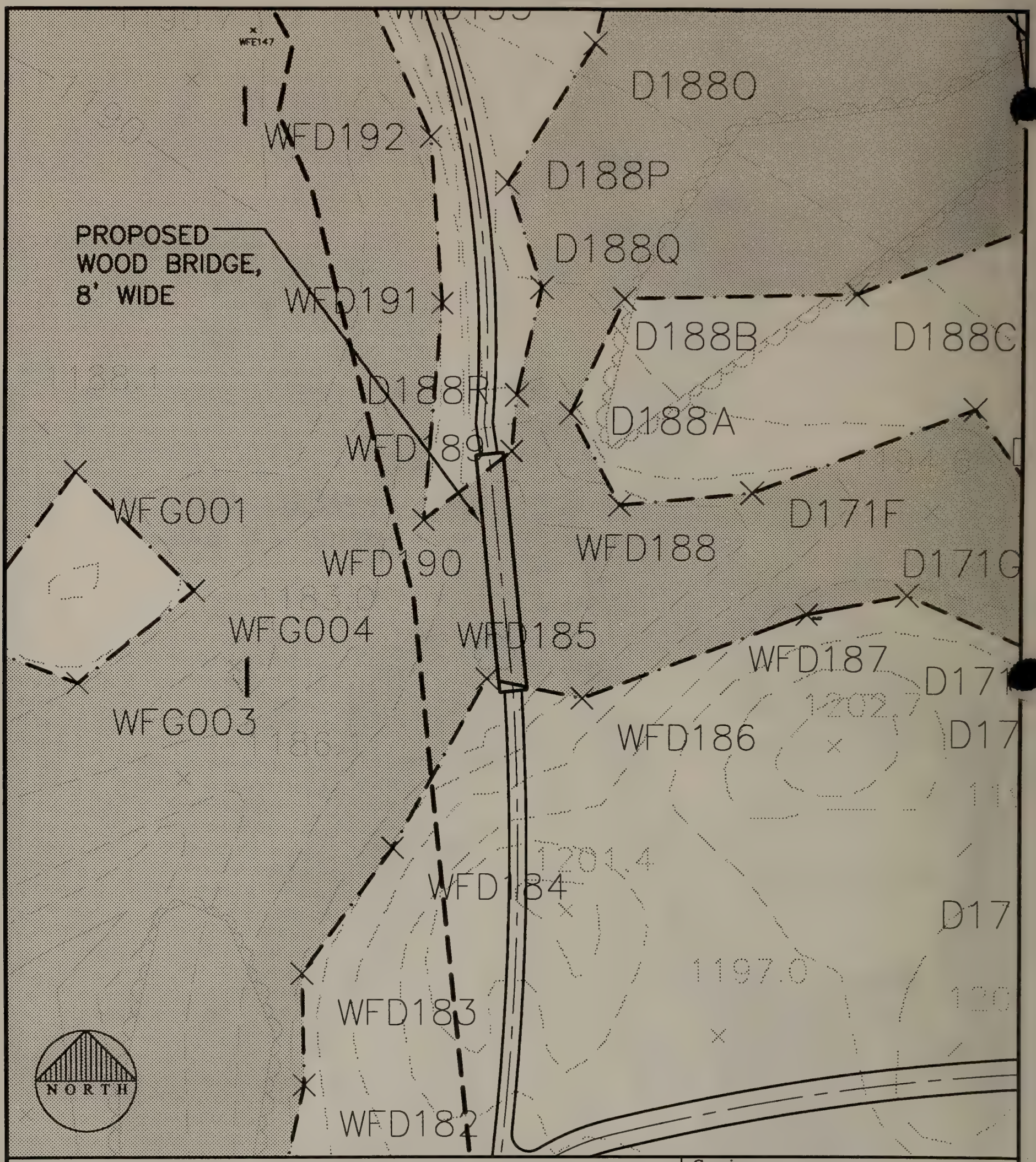
Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: **5c**

Crossing Type: I

Existing Road/Trail Crossing w/ Adjacent Wetlands - Culvert to be removed and Channel to be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

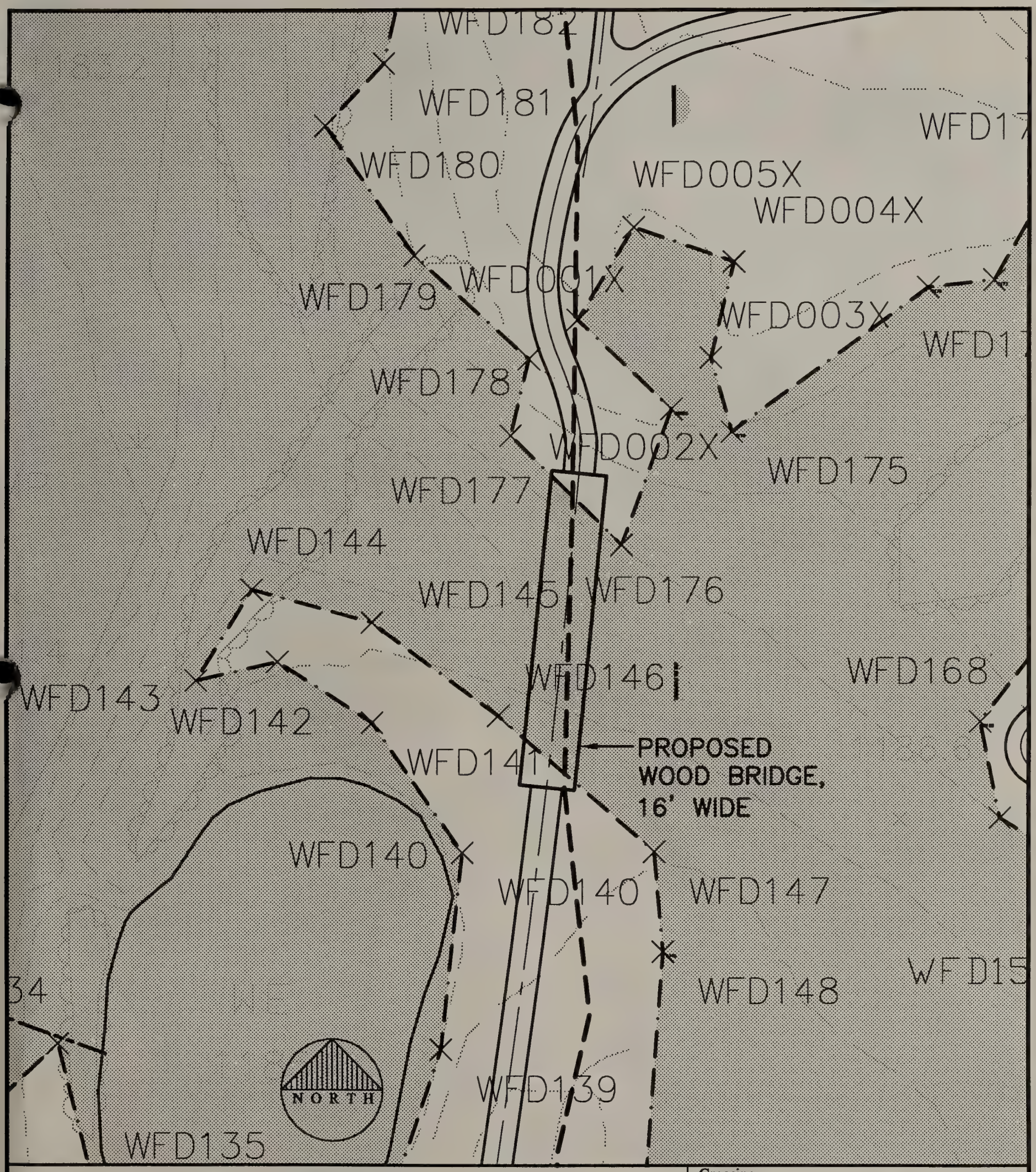
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 9

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

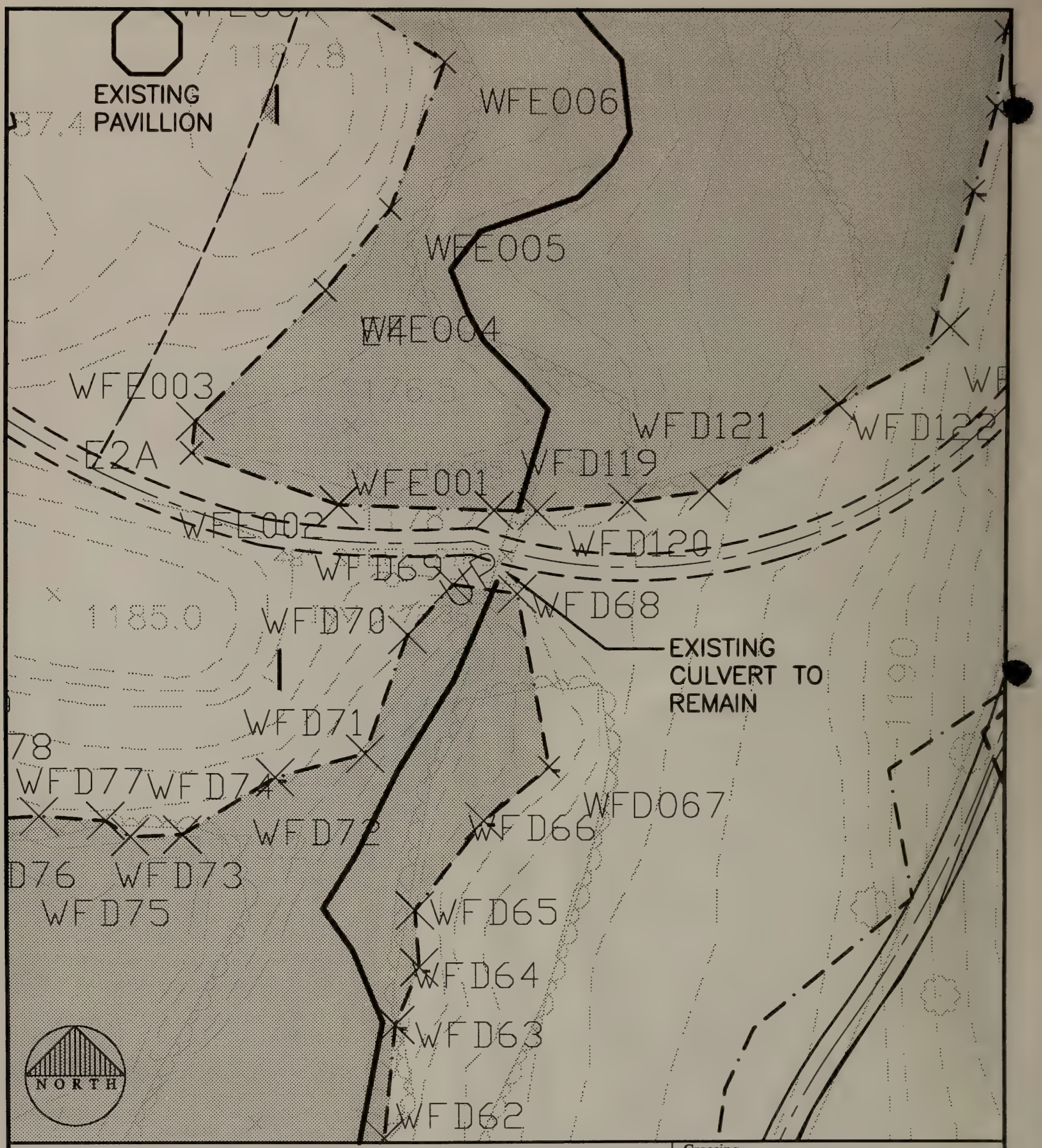
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 10

Crossing Type: To be Bridged - Combined Trail/Cart Path



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

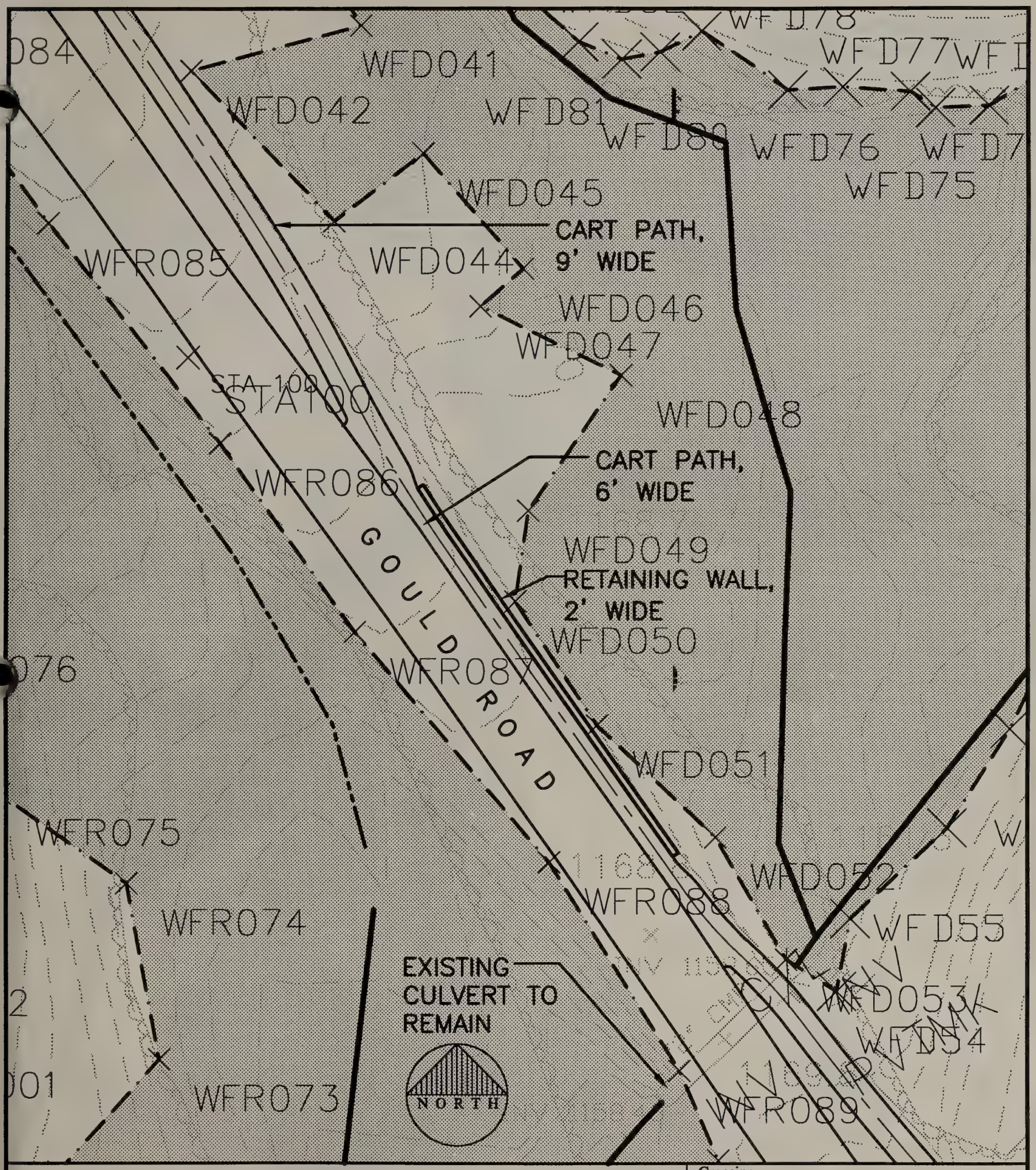
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 12

Crossing Type: Existing Road/Trail Crossing w/Culvert to Remain



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

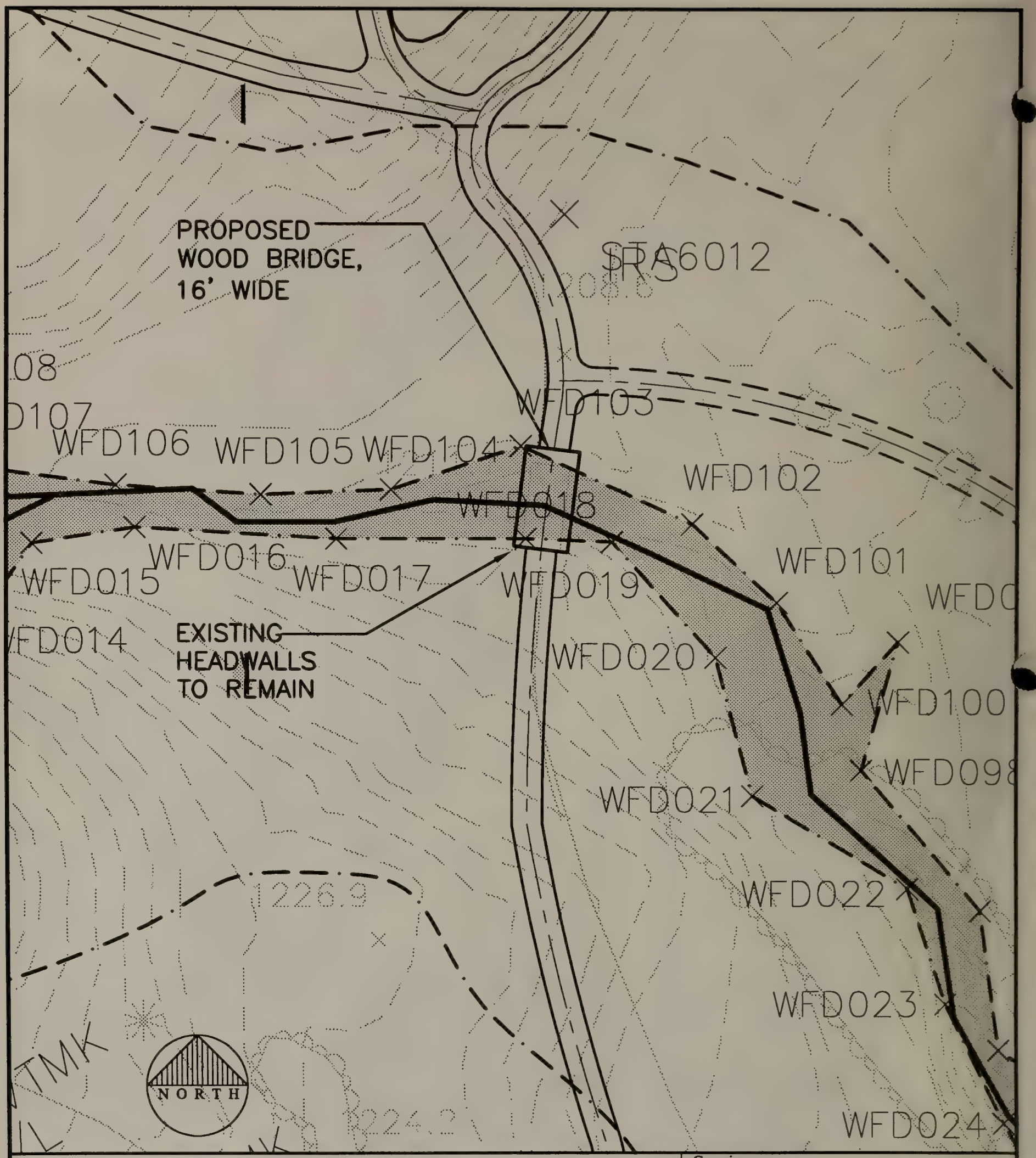
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 13/14

Crossing Type: Existing Crossing over Gould Road w/Culvert



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

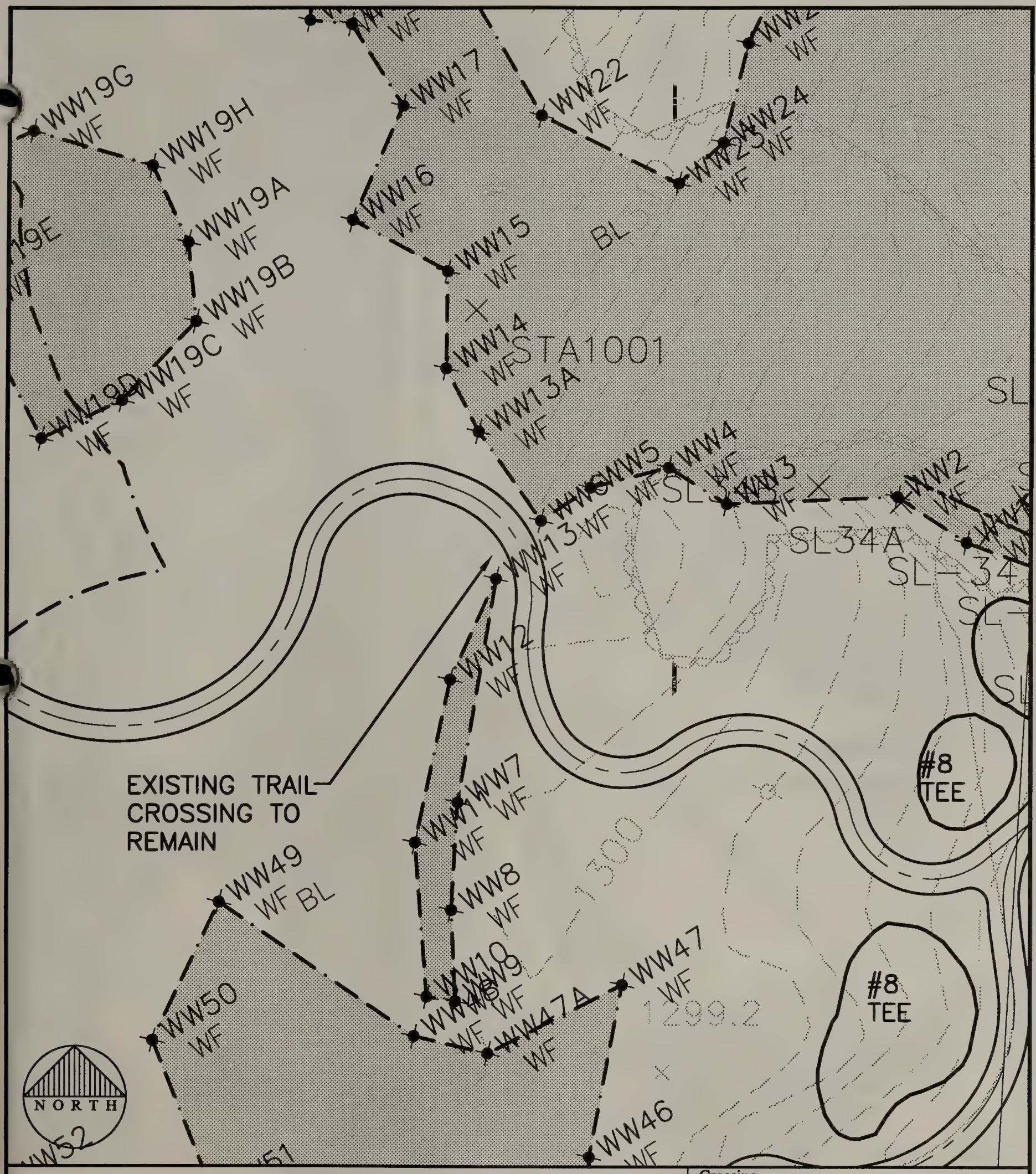
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 15

Crossing Type: Existing Trail Crossing - Wood Bridge w/Headwalls; Deck to be Replaced



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

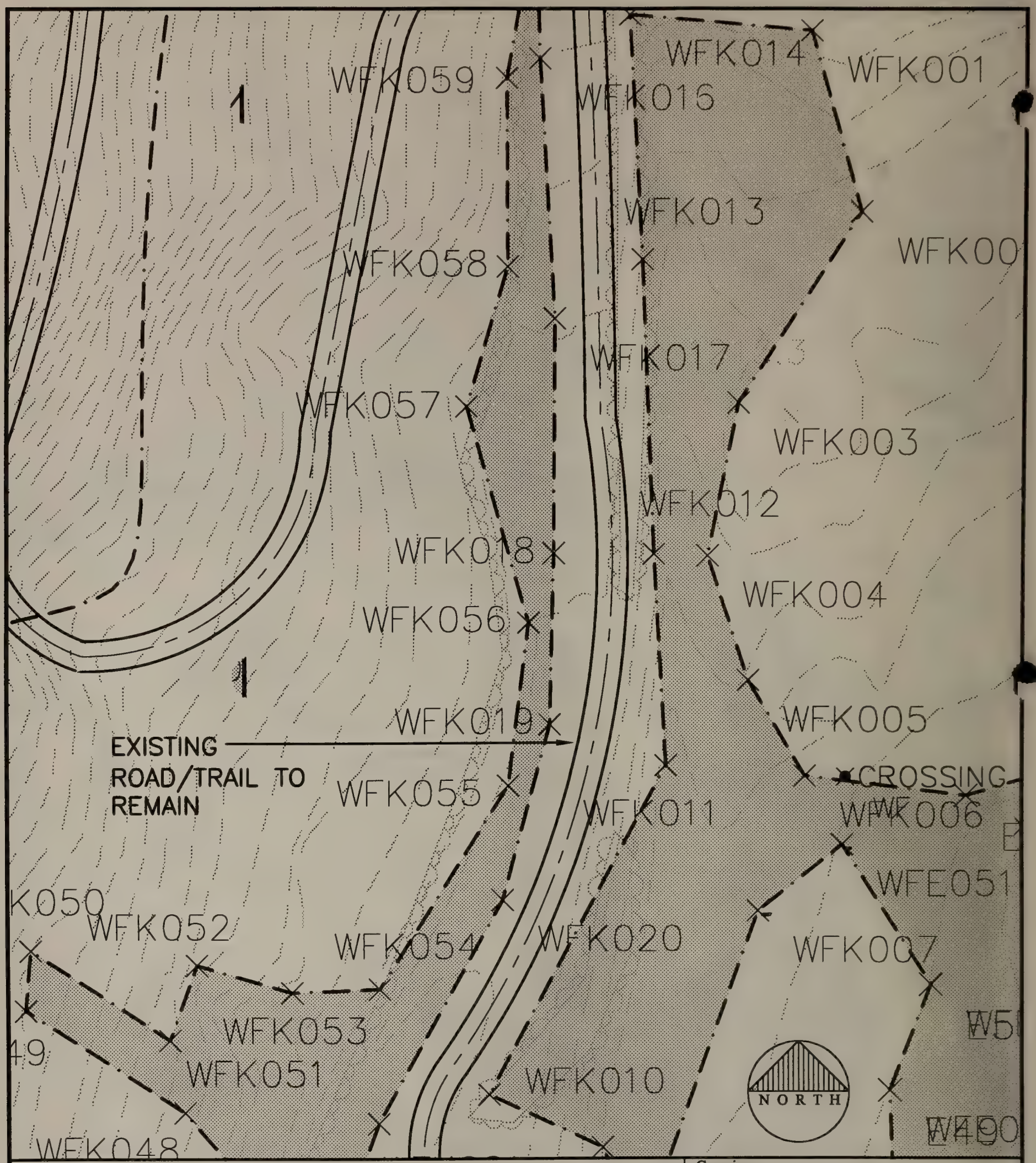
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: **16a**

Crossing Type: Existing Road/Trail w/ Adjacent Wetlands



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

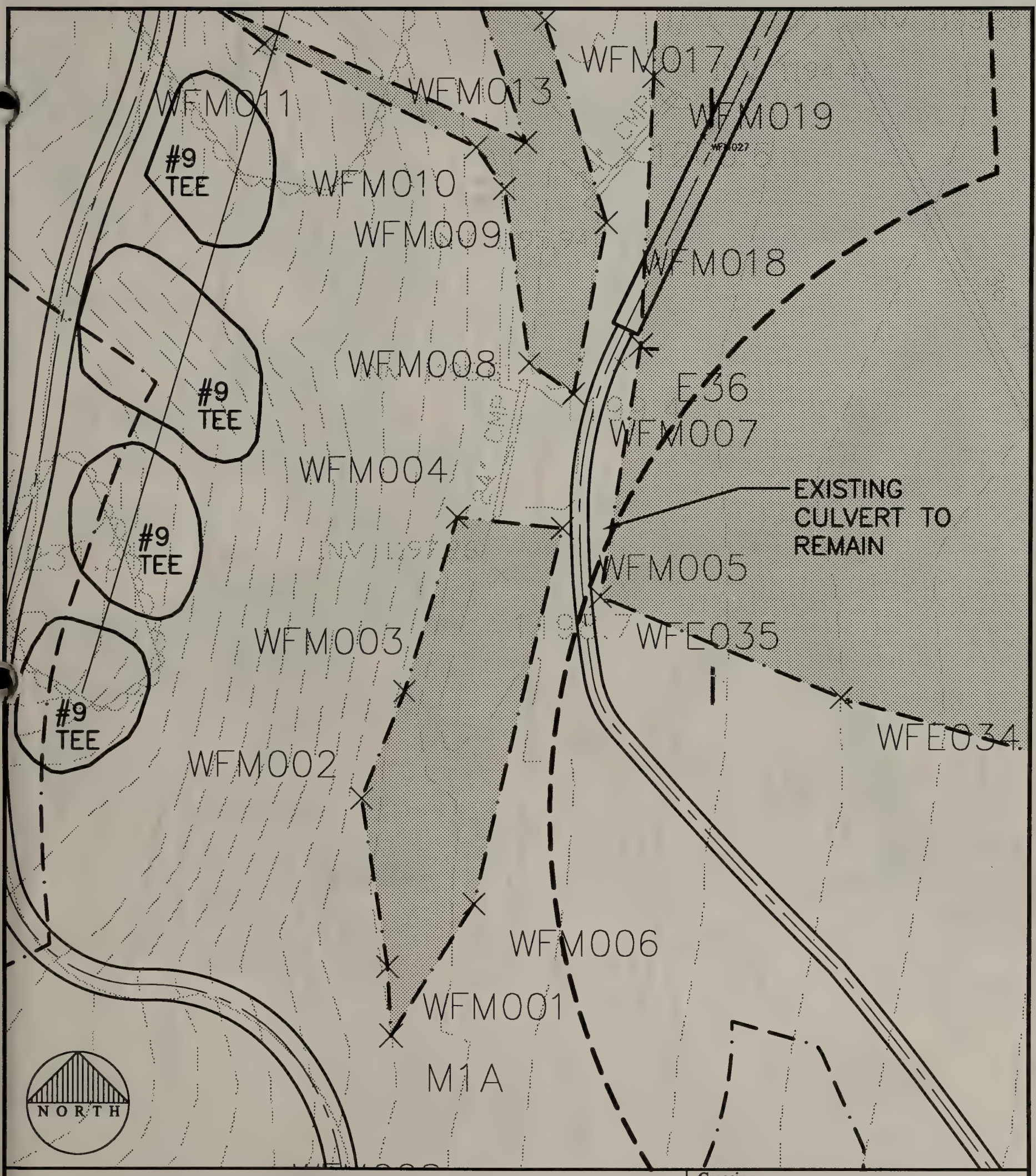
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: **16b**

Crossing Type: Existing Road/Trail Crossing w/ Adjacent Wetlands and Culvert to Remain - Combined Trail/Cart Path



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

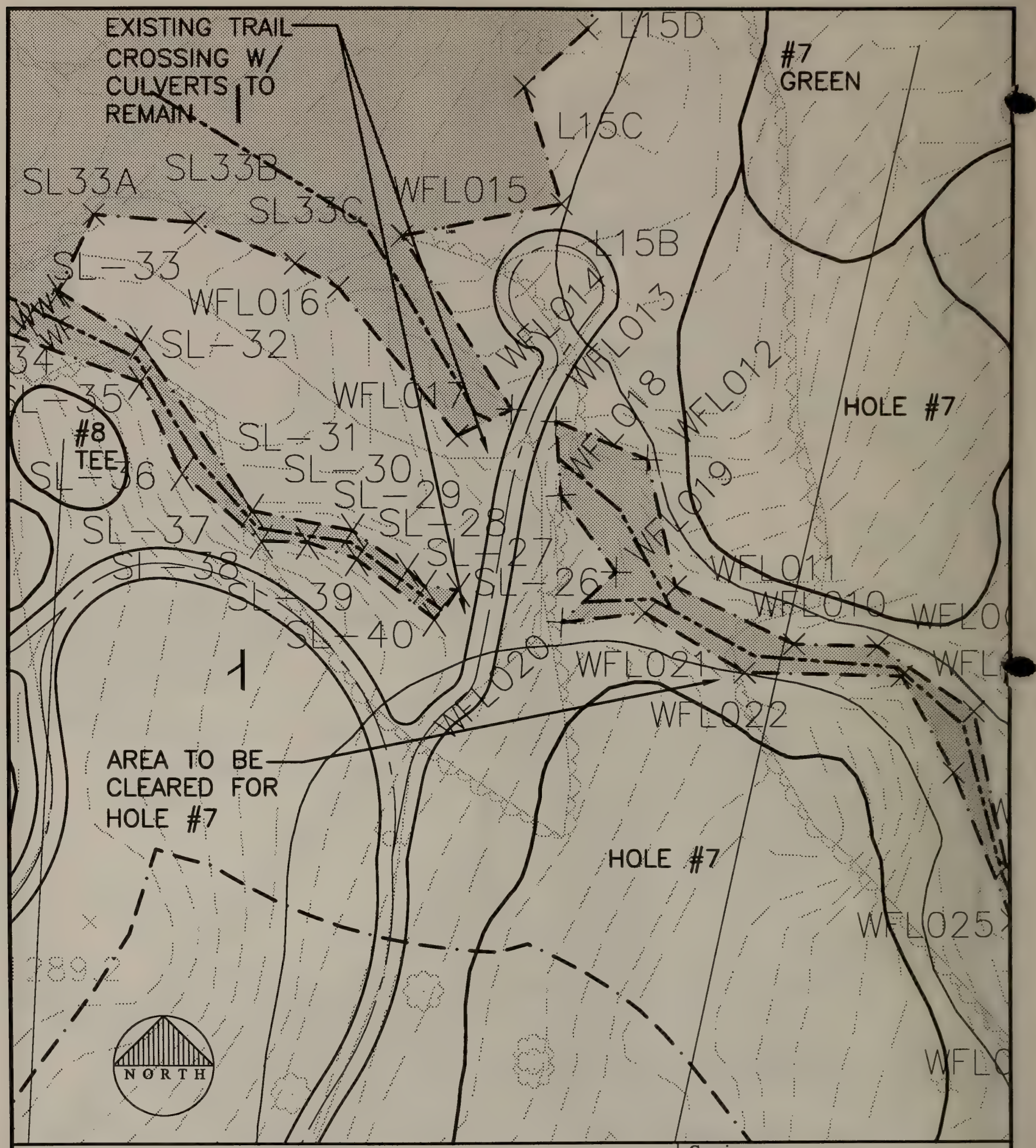
Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: **16c**

Crossing Type: 1

Existing Road/Trail Crossing w/Adjacent Wetlands and Culvert to Remain



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

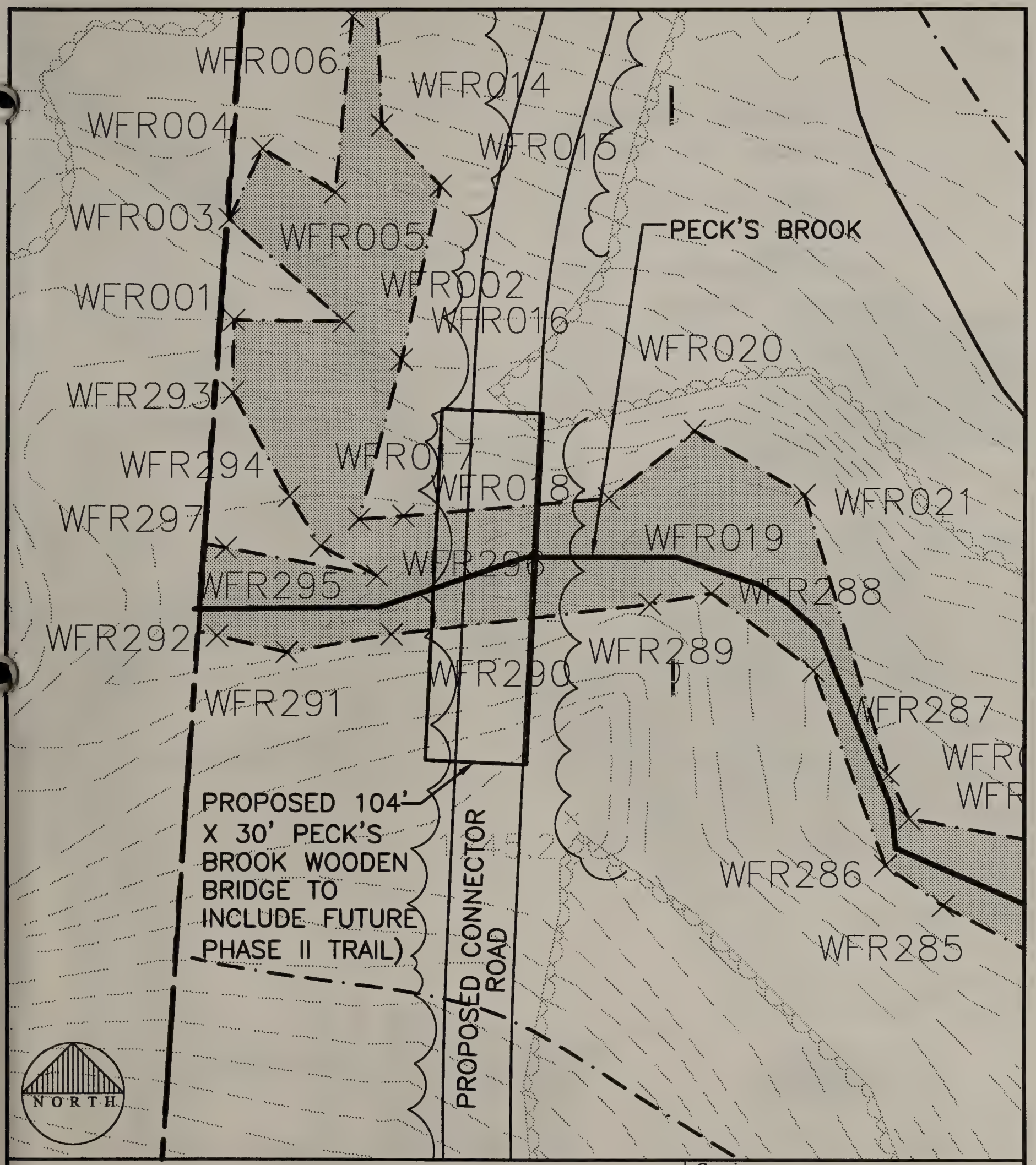
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 16d

Crossing Type: To be Cleared for Fairway



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

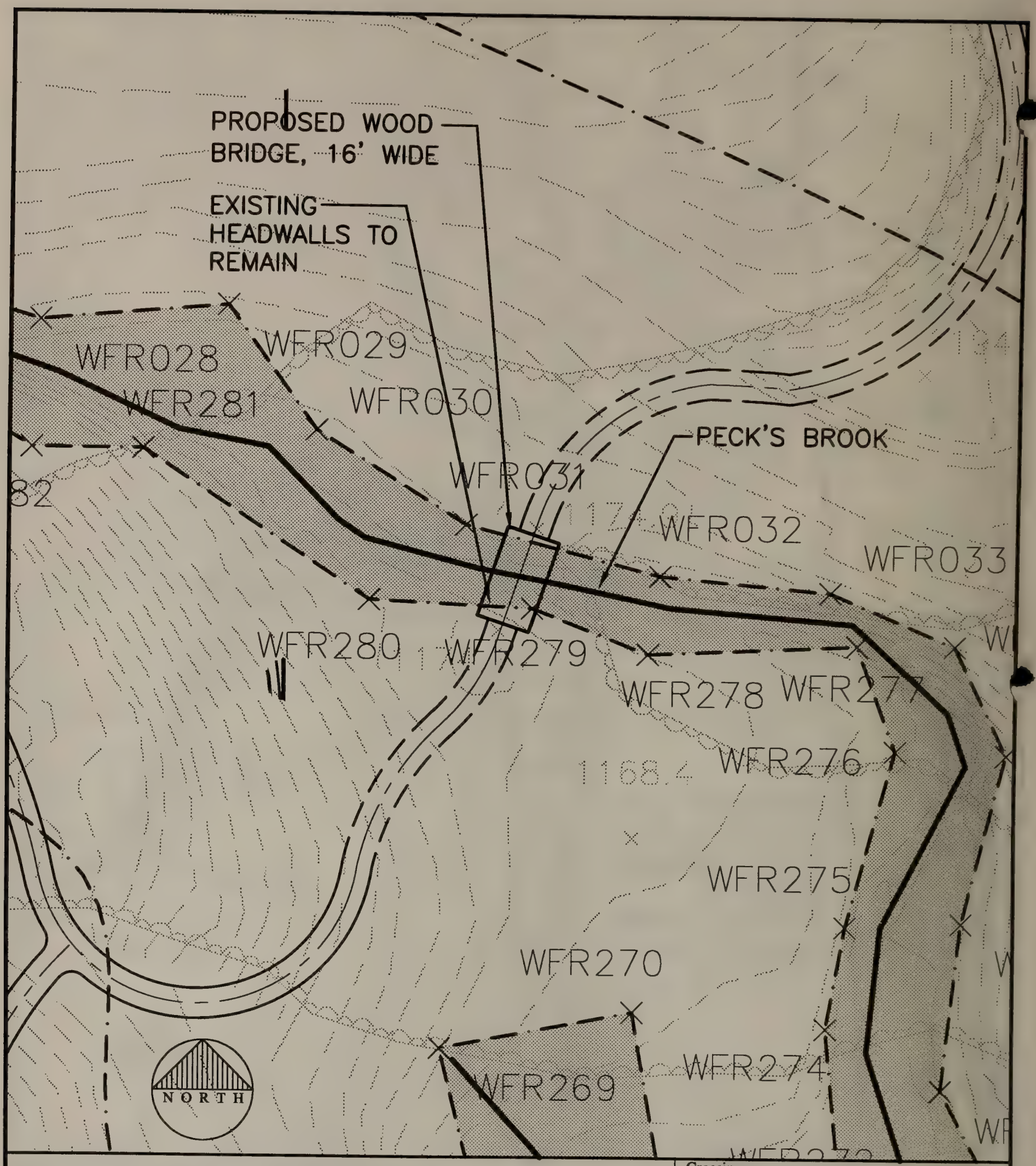
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 18

Crossing Type: Peck's Brook Wooden Bridge



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

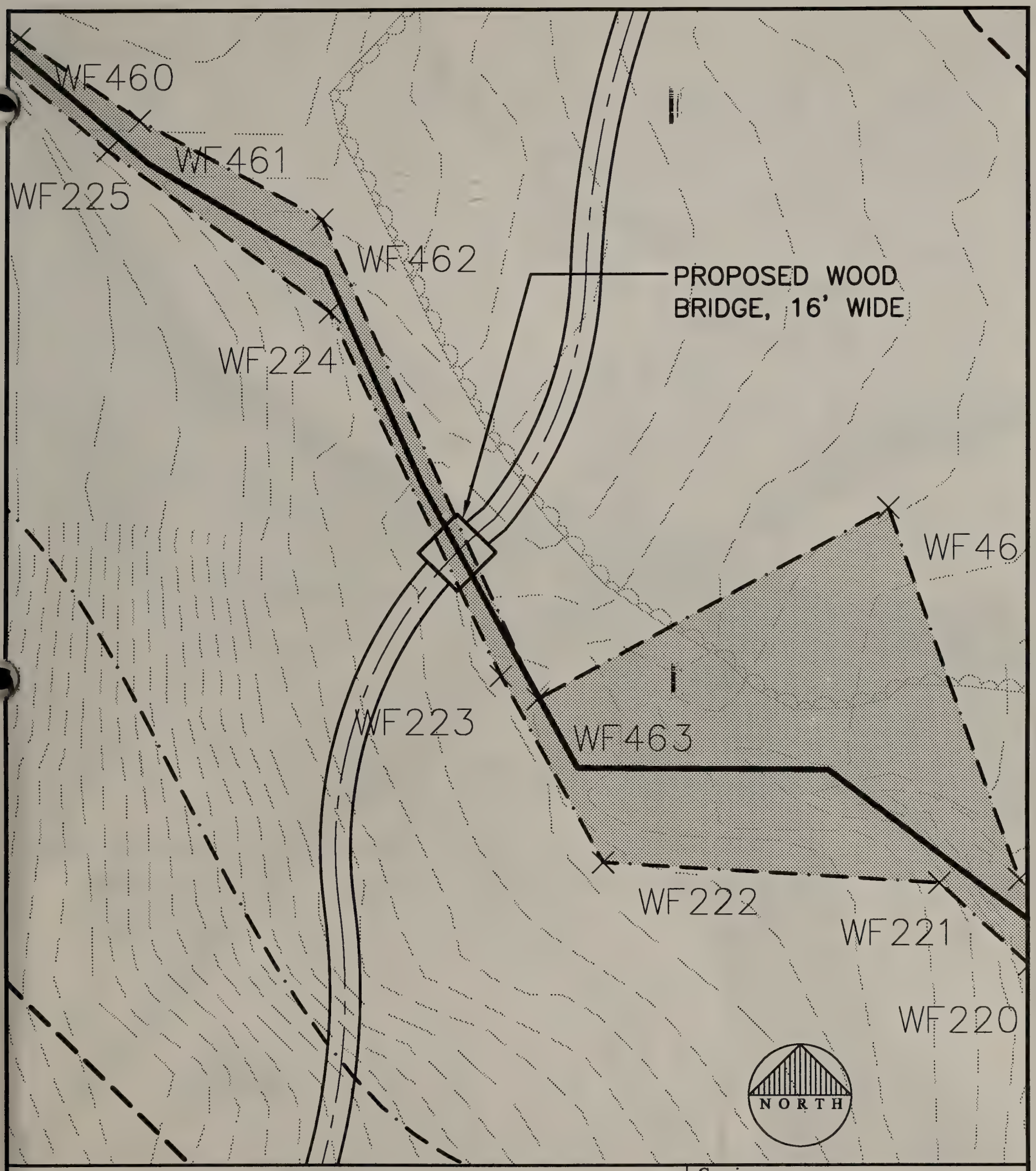
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: **19**

Crossing Type: **Existing Headwalls w/o Deck to be Bridged**



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

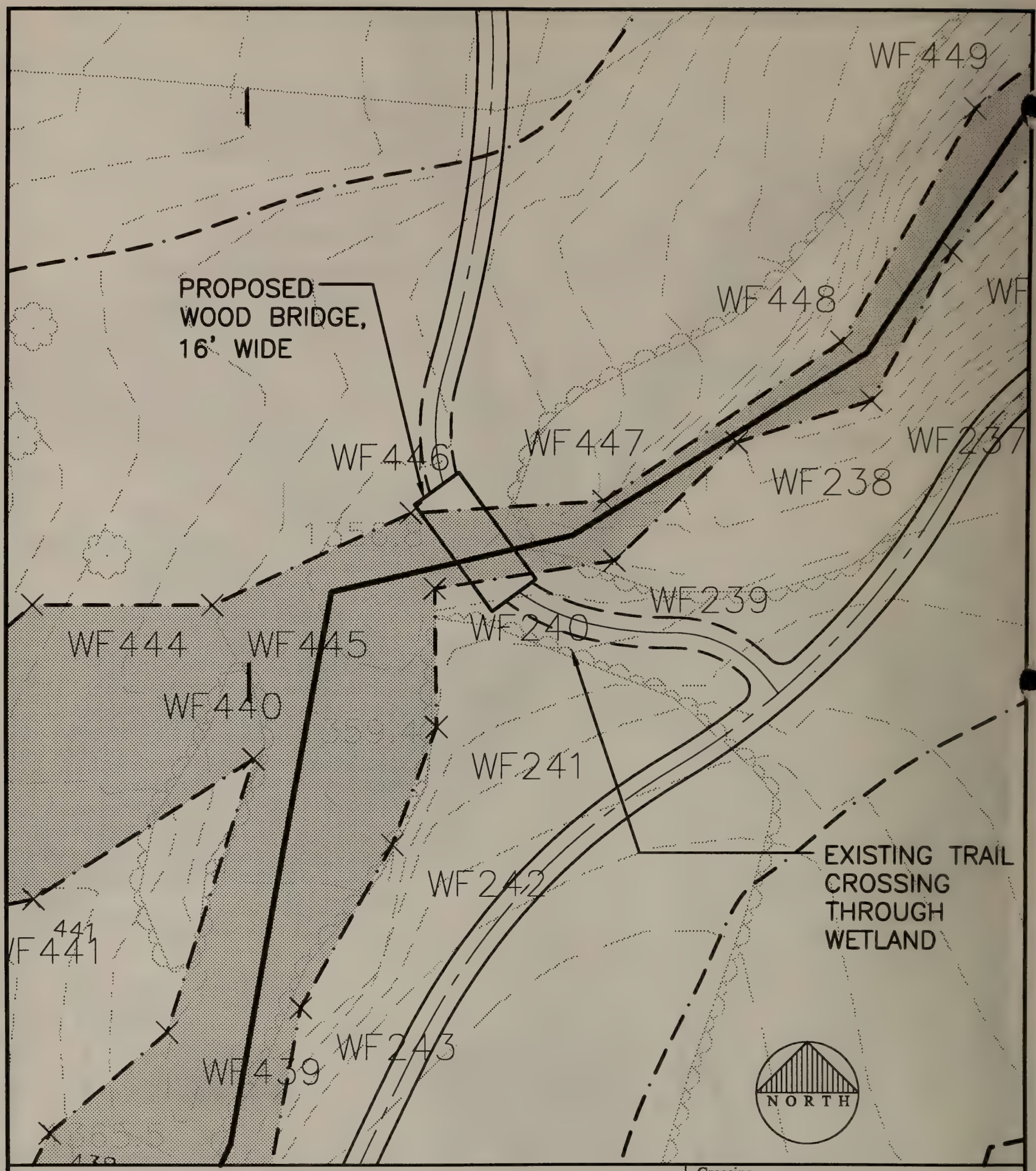
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 22

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

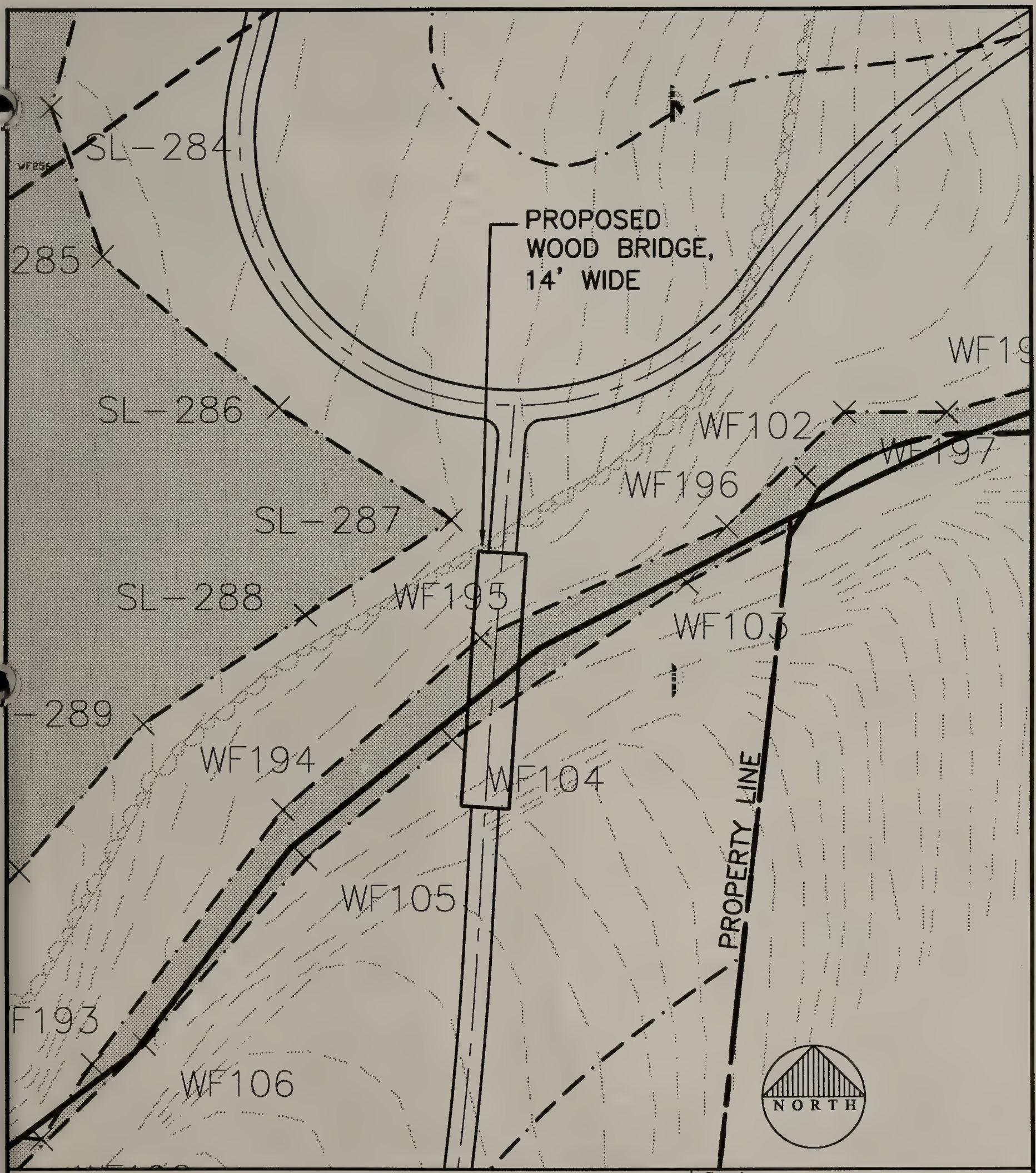
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: **22a**

Crossing Type: Construction/Maintenance Access: Existing Trail Crossing through Wetland to be Bridged - To Become Phase II Trail



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

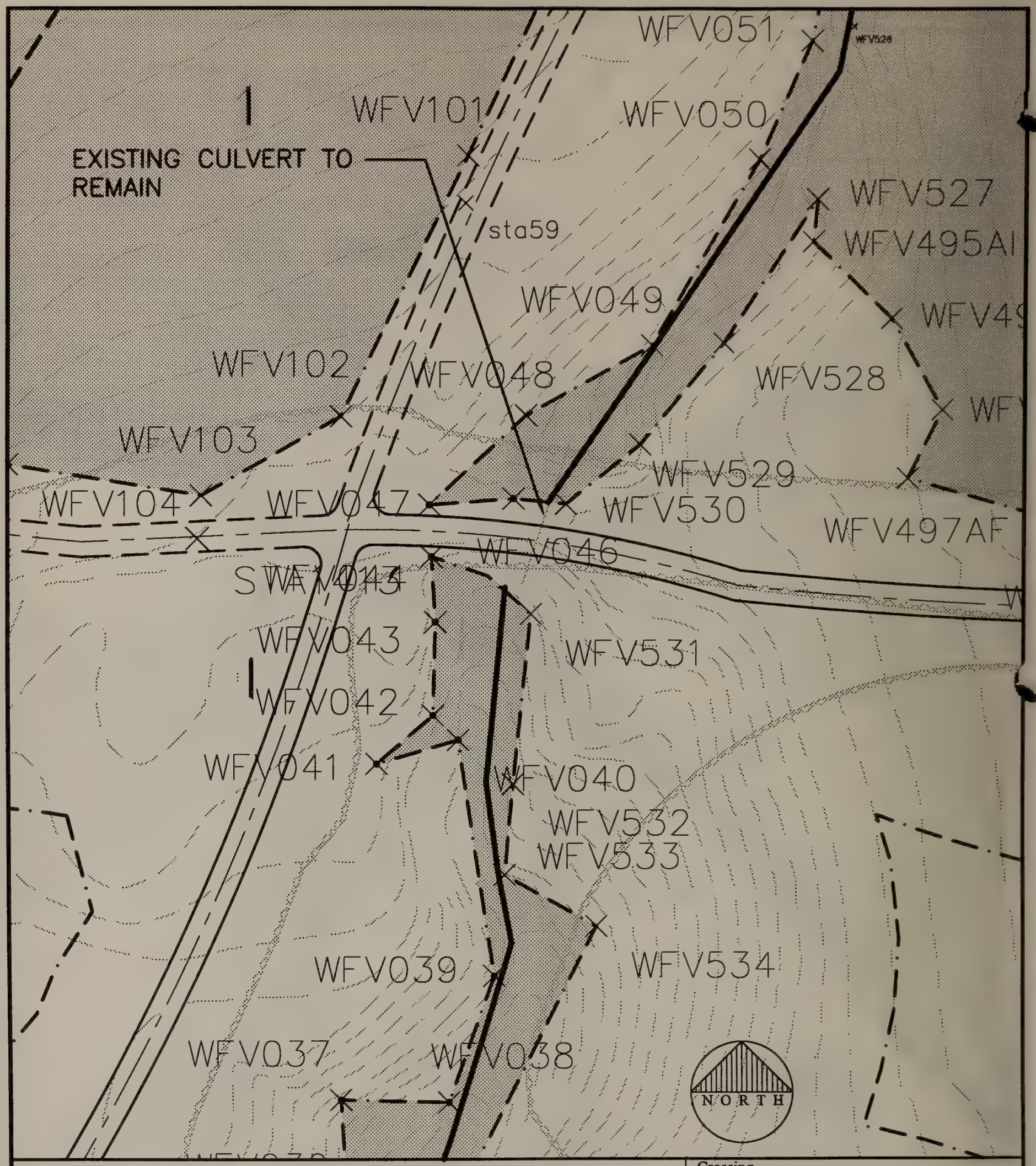
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 23

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

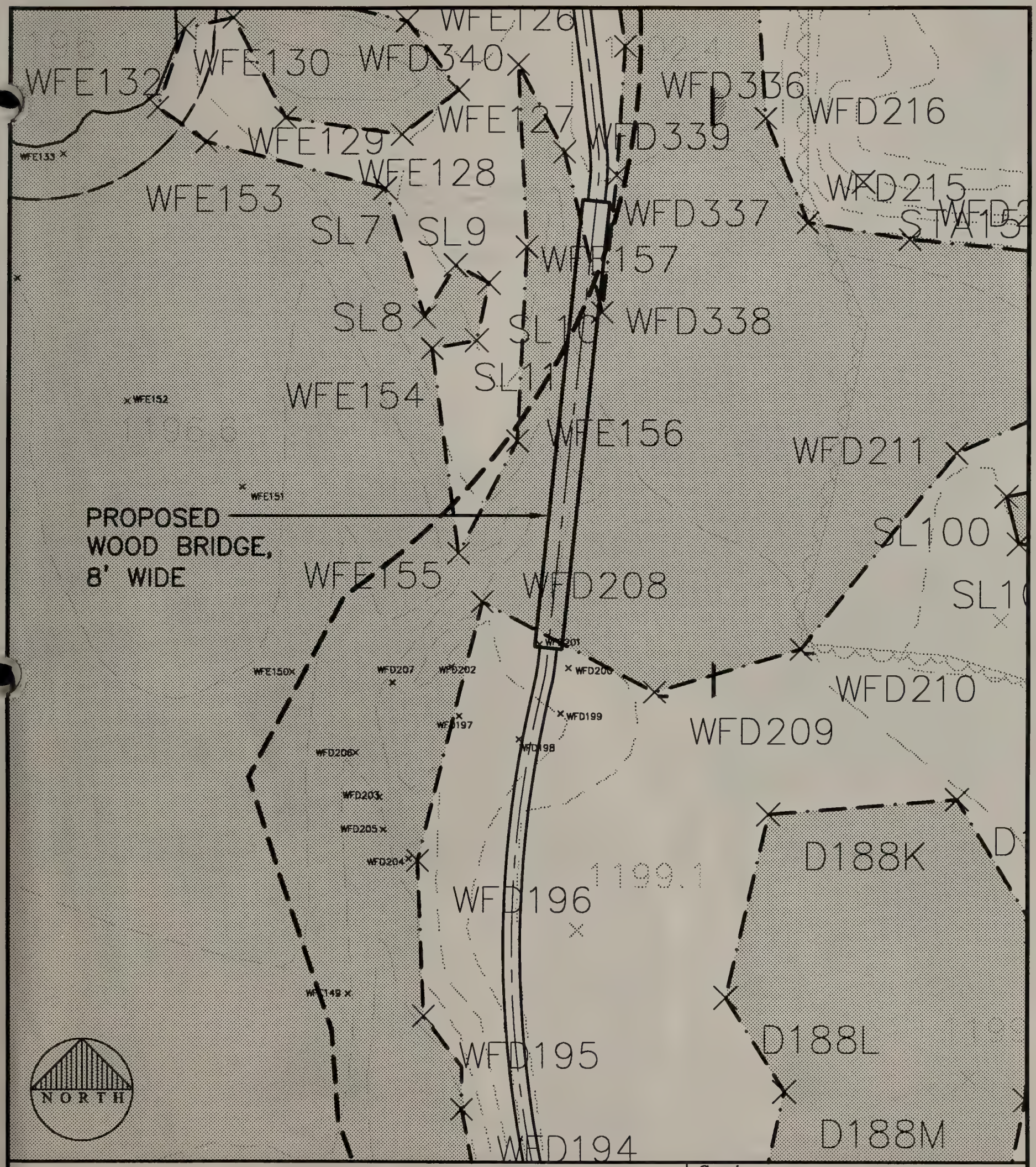
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 34

Crossing Type: Construction/Maintenance Access: Existing Trail Crossing w/Culvert to Remain -To Become Phase I Trail for Winter Use Only



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

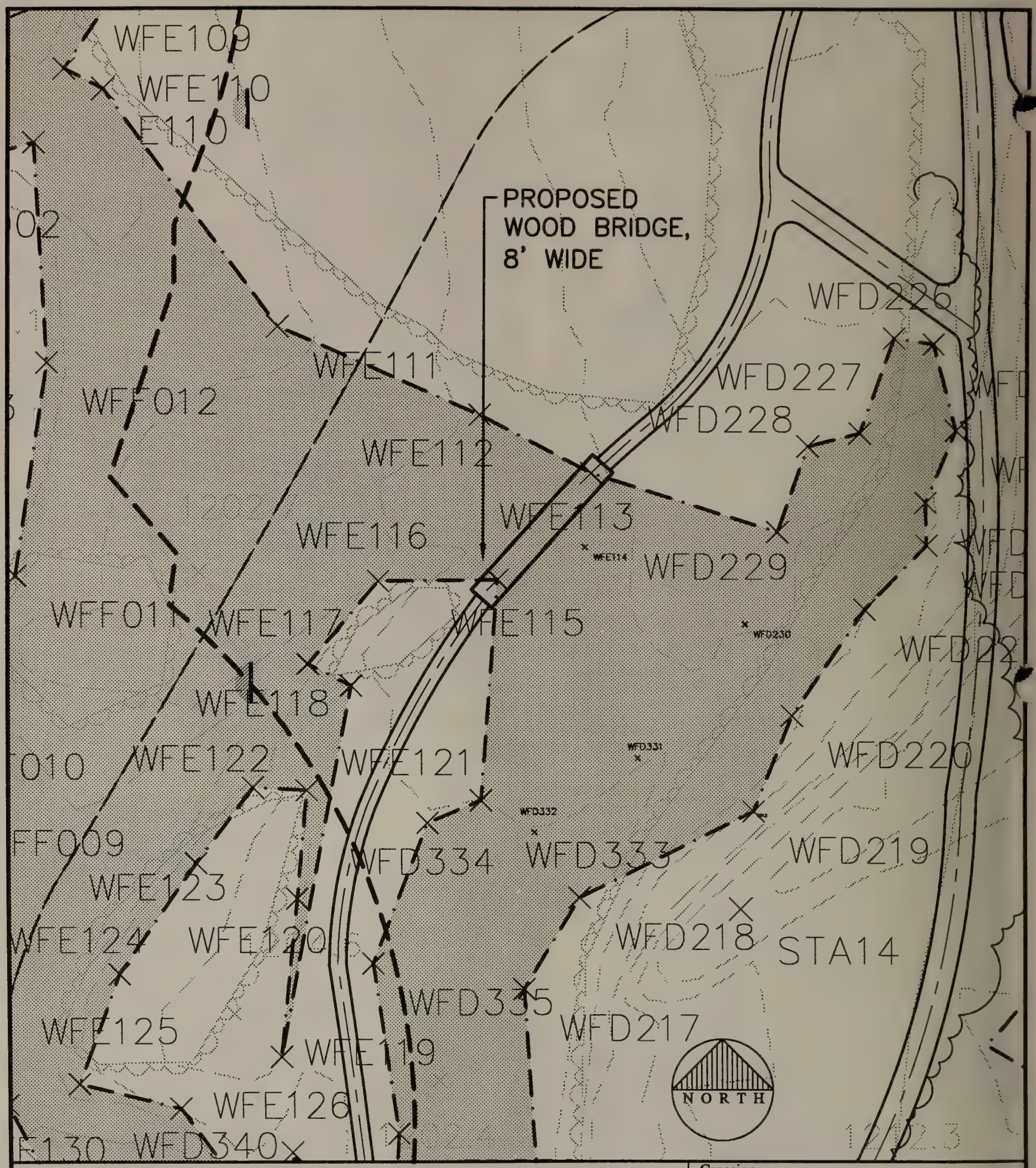
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 49

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

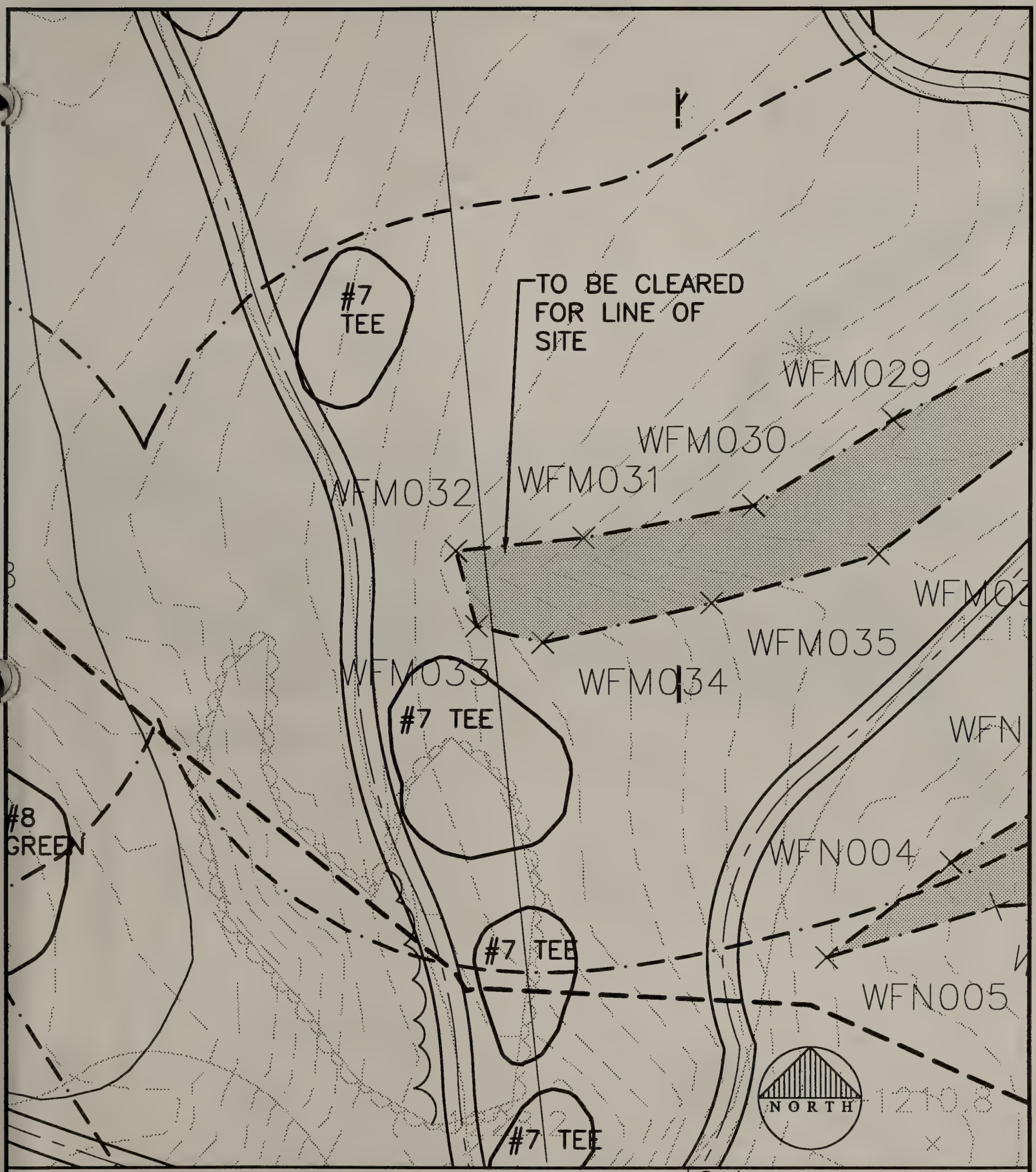
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 50

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

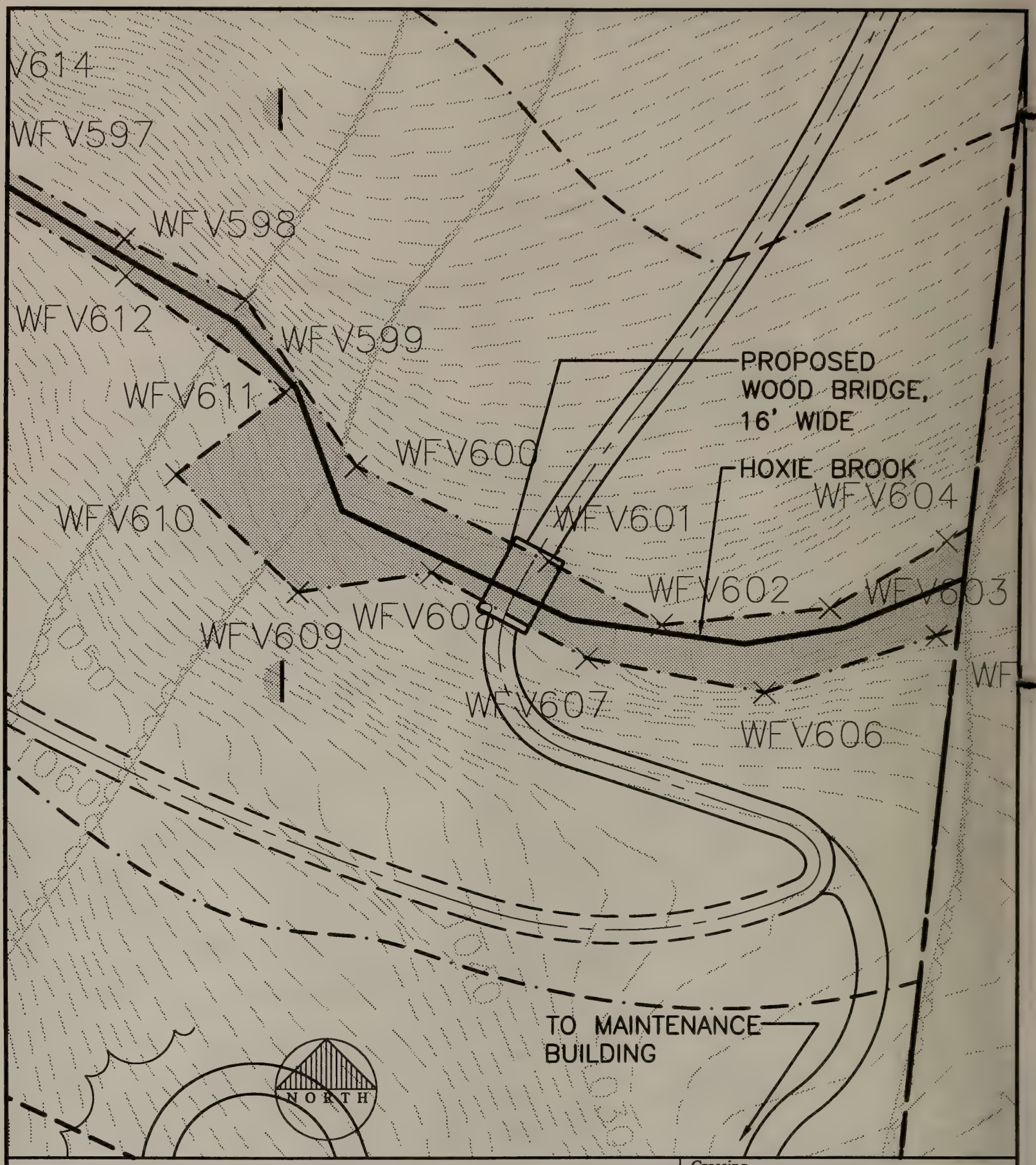
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 55

Crossing Type: To be Cleared for Line of Site



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

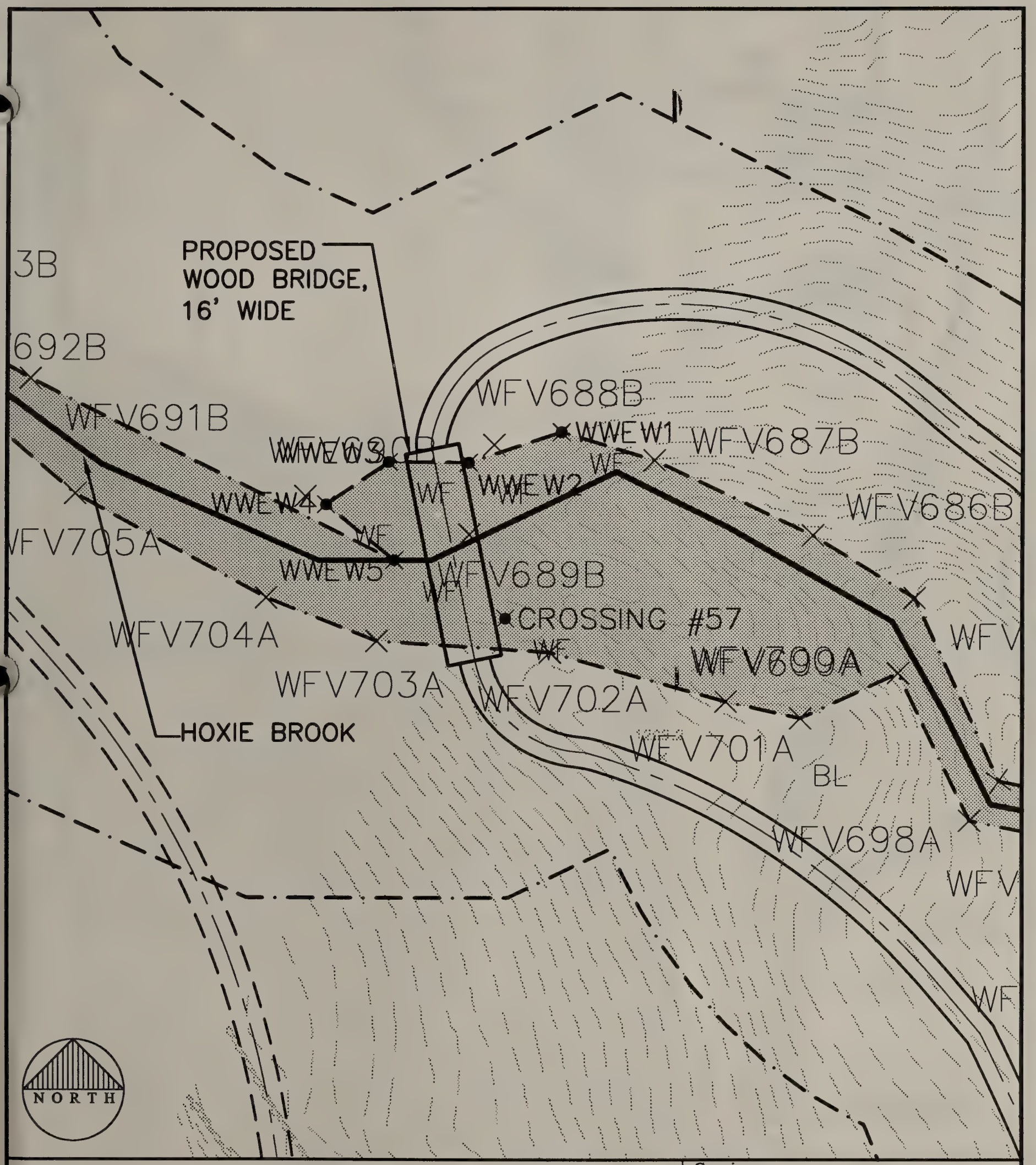
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 56

Crossing Type: Construction/Maintenance Access: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

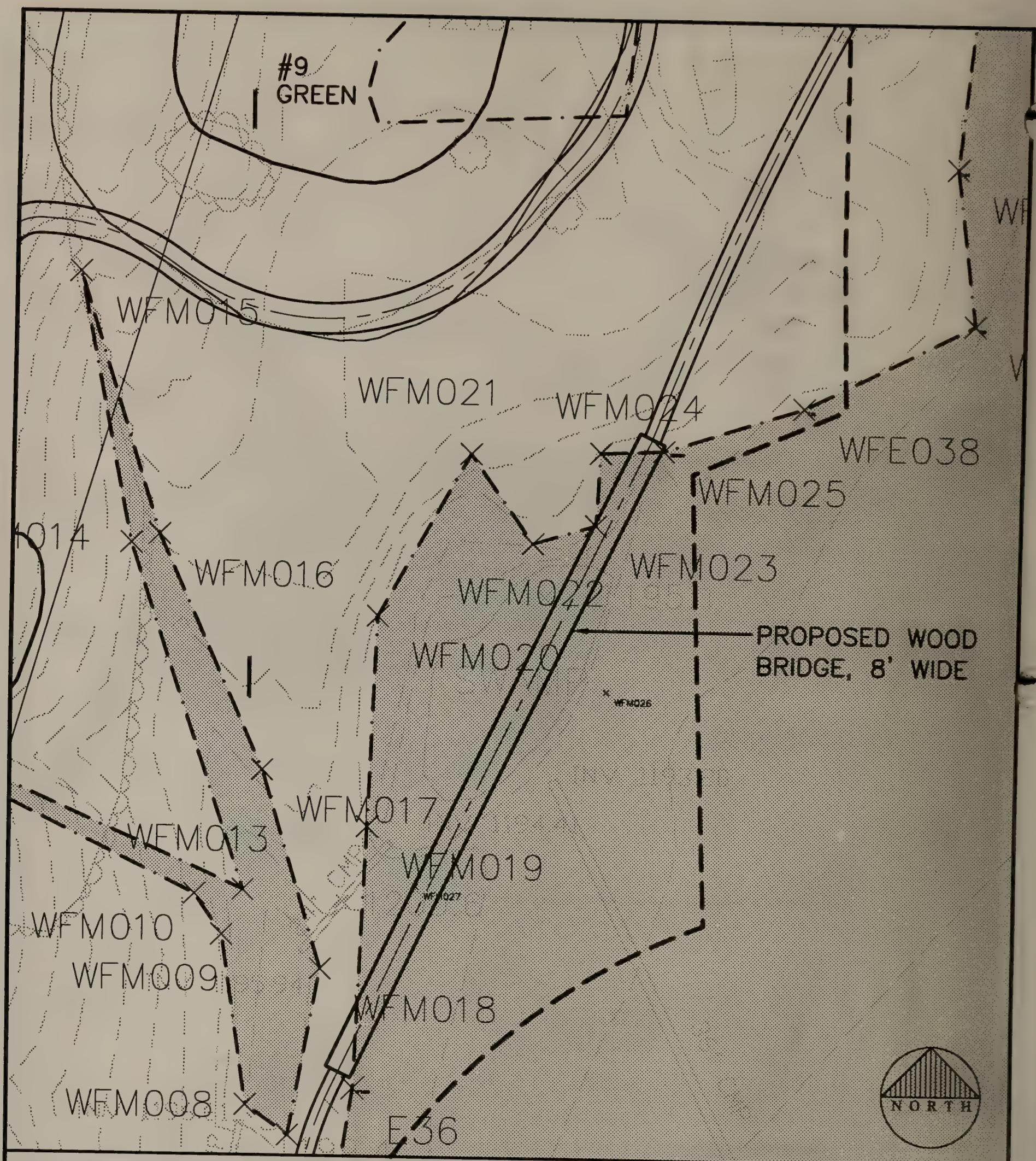
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 57

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

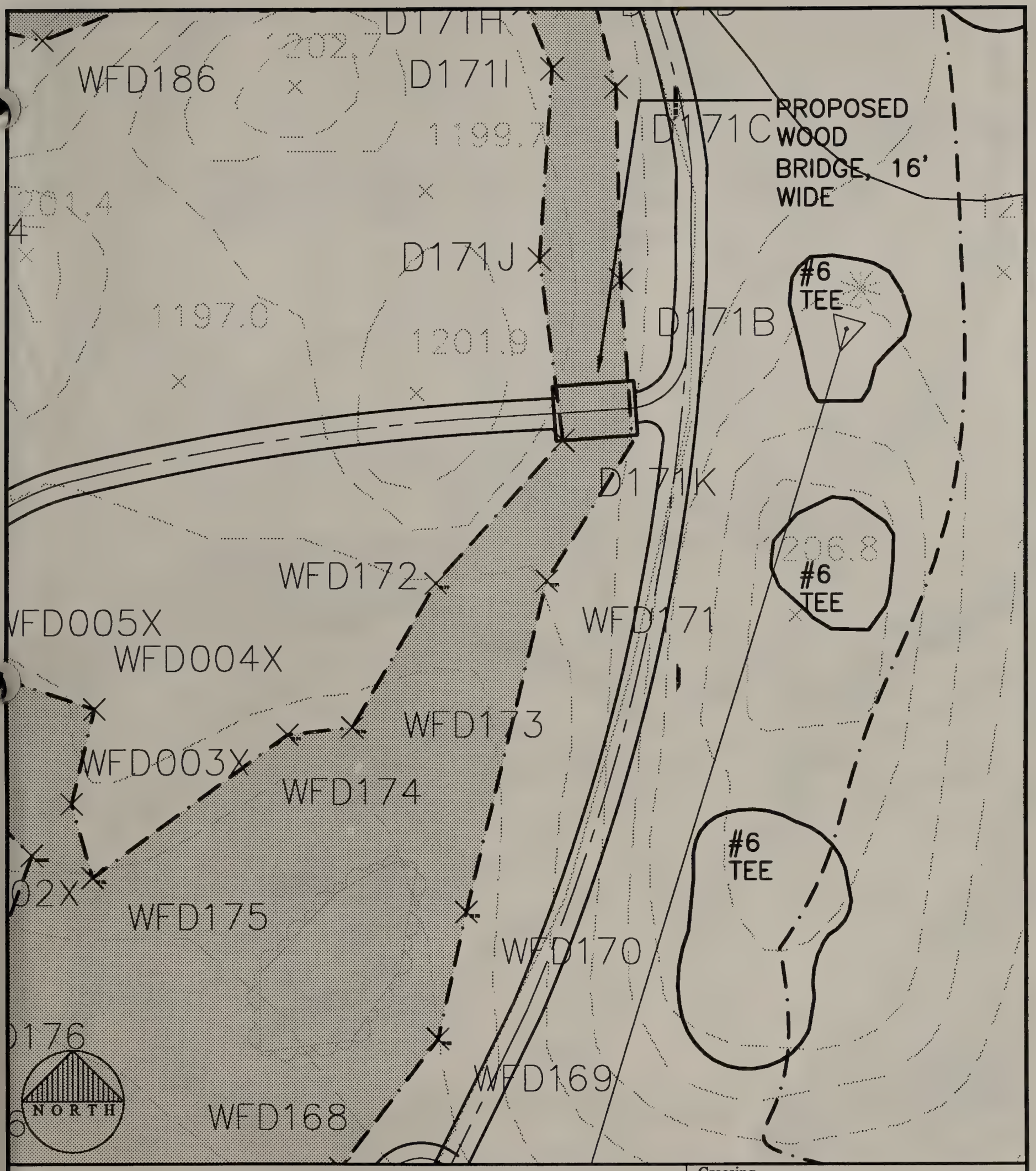
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 59

Crossing Type: To be Bridged



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

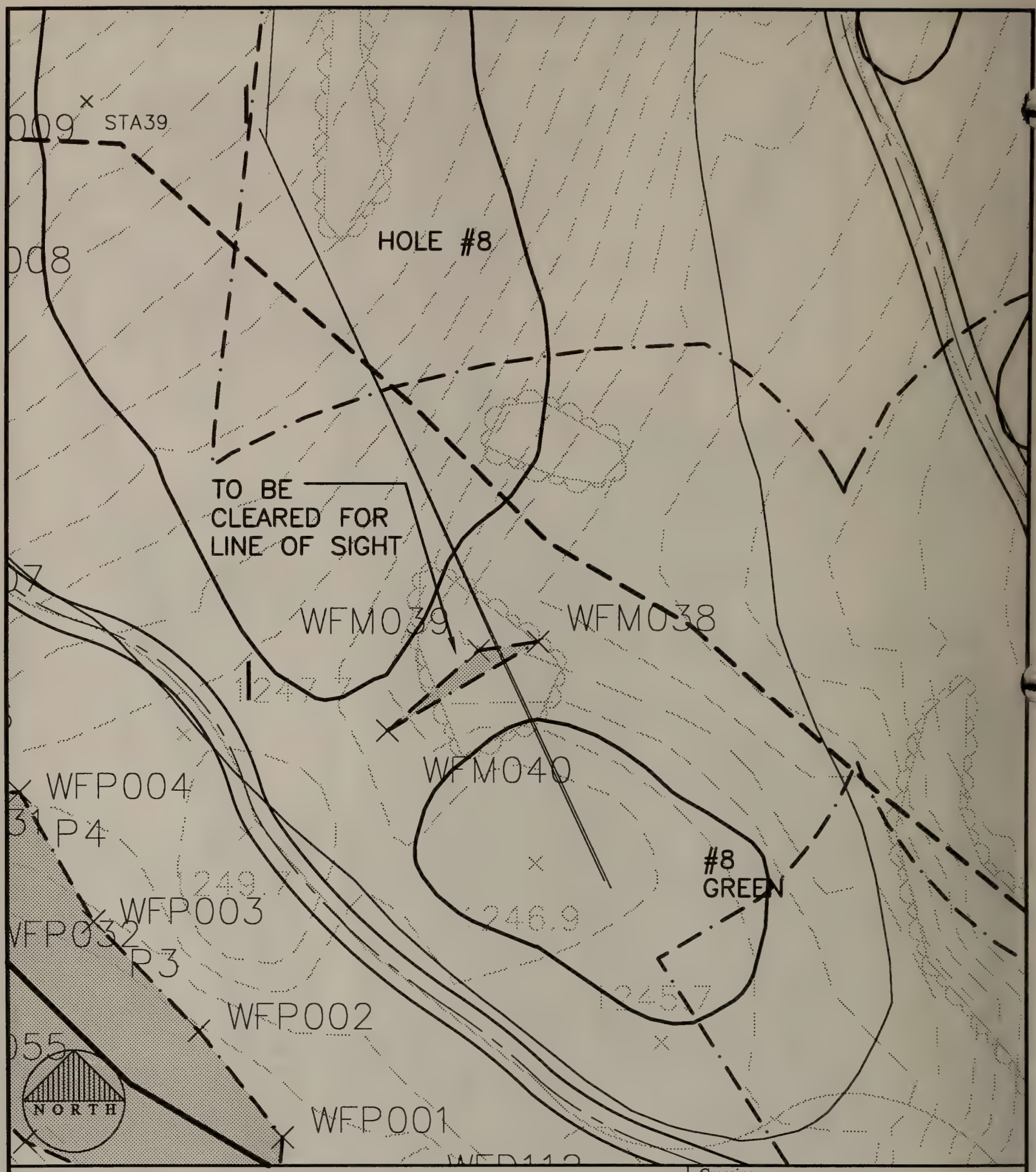
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 60

Crossing Type: Existing Trail Crossing through Wetland to be Bridged - Combined Trail/Cart Path



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

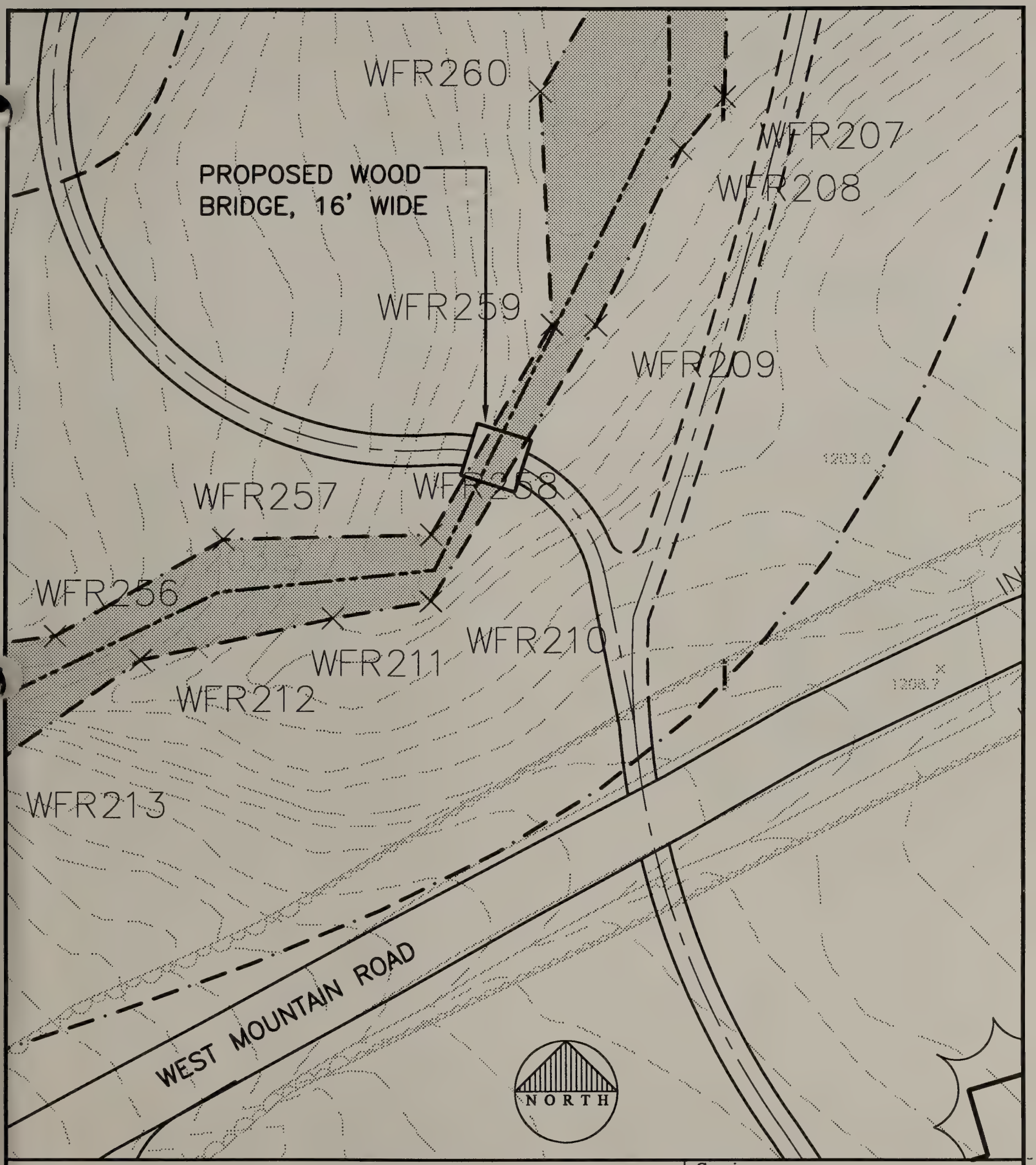
Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 62

Crossing Type: To be Cleared for Line of Site



GREYLOCK CENTER PROJECT

Massachusetts Department of Environmental Management

DEM Contract No. 0XX-99

Copley-Wolff Joint Venture

Scale: 1" = 40'-0"

Date: January 24, 2000

Crossing No.: 63

Crossing Type: To be Bridged

Appendix G

409 Massachusetts Avenue, Suite 202
Acton, MA 01720
978-263-2254
FAX 978-263-8141

Wetlands & Wildlife, Inc.

Memorandum

To: MA DEM/Project Team **From:** Marshall W. Dennis

Date: January 28, 2000

Re: Greylock Center – Wetland Compensation Plan

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☒ **FYI**

INTRODUCTION

Vegetated wetland impacts associated with the proposed Greylock Center project will occur at 26 locations, totaling approximately 4,675 square feet (SF). Of this total, approximately 4,100 SF is limited to vegetative clearing associated with construction of the multi-use trail system, golf cart paths and golf holes. Therefore, no loss of vegetated wetland resources will result from these actions. Vegetated wetland losses only will be associated with two locations (Crossings 5a and 5c) where trail widening will result in impacts to approximately 575 SF of vegetated wetland.

With specific respect to Crossing 5a, however, it should be noted that the actual area of delineated wetland to be disturbed totals approximately 2,045 SF. This includes 450 SF of currently vegetated wetland and 1,595 SF of an existing dirt road that was incorporated into the wetland delineation and approved by the Adams Conservation Commission.

While included in the delineation as a bordering vegetated wetland, the dirt road does not play a role relative to the interests of the MA Wetlands Protection Act (MA WPA) for which bordering vegetated wetlands are presumed significant. These interests include the protection of public and private water supply, the protection of groundwater supply, flood control, storm damage prevention, the prevention of pollution, the protection of fisheries, and the protection of wildlife habitat

The road, itself, is not vegetated and, for much of its length, exhibits deep ruts caused by off-road vehicles. The substrate within the road's alignment, effectively, is impervious, as evidenced by the occurrence of standing water in the ruts following rainfall events and for extended periods thereafter. Due primarily to its impervious nature, this roadway wetland does not function with respect to public/private water

supply, groundwater supply or pollution prevention, with this latter function being further negated by the absence of vegetation. Because of its landscape position on a slope, it also does not function in terms of flood control or storm damage prevention. The absence of surface water suitable for fish and the lack of vegetation preclude its functioning as fish or wildlife habitat, as well.

Accordingly, since the existing roadway wetland does not play a role relative to the interests of the MA WPA, its area (1,595 SF) was excluded from the wetland impact calculation associated with trail improvements at this location.

Regardless, as described below, wetland creation activities at a replacement ratio of approximately 2.5:1 will be implemented to compensate for all impacts to vegetated wetlands, including the above-referenced 1,595 SF excluded from the calculation of wetland impacts. Specifically, implementation of the proposed wetland compensation plan will result in the creation of approximately 15,650 square feet (SF) of vegetated wetlands, as well as an additional area of open water totaling approximately 2,750 SF.

WETLAND COMPENSATION PLAN

OVERVIEW/PLAN GOALS AND OBJECTIVES

The MA WPA regulations at 310 CMR 10.55(4)(b) set forth performance standards for wetlands replacement. In addition to requiring at least a 1:1 aerial replacement of impacted bordering vegetated wetlands, the following also are required:

- The ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;
- The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;
- The replacement area shall have an unrestricted hydraulic connection to the same water body or waterway as the lost area;
- At least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods.

With respect to the Greylock Center project, however, compliance with each of these replacement area criteria, particularly the replacement of vegetative cover at each

proposed waterway/wetland crossing, would not provide significant, if any, benefit with respect to the wetland statutory interests set forth in the MA WPA. This is due to the primary nature of the impact, i.e. clearing, the limited extent of clearing to be conducted at each wetland impact location, and the existing abundance of wetland vegetation to remain undisturbed at these sites.

Consequently, a wetland compensation site selection process was initiated with the goal/objective of identifying a site at which the benefits derived from wetland creation activities would be maximized. In this regard, a single wetland replacement area, rather than multiple sites, was considered to best serve this stated objective.

A variety of locations throughout the Greylock Center property were identified as potentially suitable for wetland compensation purposes. The Glen area, however, was determined to be most suitable, particularly with respect to hydrologic conditions required for the establishment and long term viability of wetlands.

This site selection rationale is supported by the extensive wetland system already present at this location, with many of the wetlands having been 'created' by the initiation and abandonment of past construction activities. More specifically, the northern portion of the Glen exhibits the added advantage of providing both vernal pool and rare species habitat, most notably breeding sites for the Jefferson salamander, a State-listed species of special concern, as well as other vernal pool species. Based upon an evaluation of surrounding habitat conditions, this portion of the Glen also is directly proximate to terrestrial salamander habitat. Consequently, site selection focused on this portion of the overall site where, in addition to creating compensatory wetlands, vernal pool and rare species habitat to augment existing habitat conditions also may be established.

In light of the above, a site located in the northwestern portion of the Glen was selected as best meeting the site selection criteria. This site presently is dominated by old field vegetation, with herbaceous plant species being most abundant. The site's location is indicated on the Final EIR Plan, as well as in Attachment A.

WETLAND COMPENSATION PLAN IMPLEMENTATION

Implementation of the proposed wetland compensation plan involves three basic elements. As described below, these elements include site preparation, planting and monitoring/maintenance.

With respect to site preparation, the boundaries of adjacent wetlands initially will be flagged, as will the limits of construction to preclude unnecessary disturbances. Hay bales and/or silt fencing also will be installed to control soil erosion and sedimentation with respect to nearby resources. These controls will be periodically inspected and

maintained, as required, until issuance of a Certificate of Compliance by the Adams Conservation Commission.

Subsequently, existing vegetation within the wetland compensation site will be cleared, and the compensation area excavated and graded in accordance with the proposed plan. In this regard, the aerial extent of site disturbance will total approximately 31,250 SF (0.72 acres).

For the most part, the compensation area will be over-excavated by a minimum of six (6) inches, consistent with the proposed grading plan. Soil consisting of loam with at least 12% organic carbon content by weight then will be placed within the over-excavated portion of the wetland compensation area to attain final grades, as indicated on the proposed grading plan. Exceptions to this approach include the proposed open water areas that will be graded to a depth of approximately 2.5' below the adjacent wetland elevation.

As the conceptual grading plan presented in Attachment A indicates, the proposed wetland will have a base elevation of 1199.5' above mean sea level (msl). Based on the site-specific survey of two points within the existing wetland at this location, which were surveyed to be 1199.58' msl and 1200.39' msl, the proposed base elevation is consistent with existing wetland elevations. The elevation of the existing water surface was surveyed to be 1199.05' msl. Based on this documentation, suitable hydrologic conditions at the selected base elevation will exist for wetland creation purposes.

After final grading, the planting program will be implemented (see Attachment A). All planting will commence and be completed during the spring season to maximize opportunities for the establishment and growth of plantings during the first growing season. A list of proposed shrub species for planting in the wetland compensation area, as well as herbaceous aquatic emergent species to be planted within open water areas, is presented in Table I.

All shrub plantings are proposed to be a minimum of 2' – 3' in height. Plantings will be arranged in variably shaped clusters of multiple species, with the number of plants and species diversity to vary between adjacent clusters. Individual plants within each cluster will be planted on 5' centers. Within two of the open water areas, and within 5' of the wetland/open water edge, herbaceous aquatic emergent plantings will be clustered on 2' centers. To diversify habitat conditions, no plantings will be placed in the third area of open water.

TABLE I
PROPOSED PLANT SPECIES – WETLAND COMPENSATION AREA
GREYLOCK CENTER - ADAMS, MA

Common Name	Scientific Name
Shrub Plantings	
Silky Dogwood	*Cornus amomum*
Winterberry	*Ilex verticillata*
Swamp Azalea	*Rhododendron viscosum*
Elderberry	*Sambucus canadensis*
Highbush Blueberry	*Vaccinium corymbosum*
Wild Raisin	*Viburnum cassinoides*
Herbaceous Plantings	
Sweetflag	*Acorus calamus*
Water Plantain	*Alisma plantago-aquatica*
Marsh Marigold	*Caltha palustris*
Pickerelweed	*Pontederia cordata*
Northern Arrowhead	*Sagittaria latifolia*
Burreed	*Sparganium americanum*

All plantings will be conducted in accordance with procedures provided by the nursery supplying the plant stock. Under no circumstance will any invasive alien plant species as listed by the MA Natural Heritage and Endangered Species Program be planted. Once shrub and herbaceous planting has been completed, a wetland seed mix consisting of herbaceous wetland species will be applied to the entirety of the compensation area to 1200.0' msl. The wetland seed mix, however, will not be applied to proposed areas of open water. Within the side slopes established adjacent to the wetland compensation area, an upland seed mix containing herbaceous species exhibiting wildlife values (e.g. food and cover) will be applied to stabilize these areas. Based on the proposed grading plan, the area over which the upland seed mix will be applied totals approximately 12,850 SF.

Once planted, the wetland compensation area will be secured/fenced to discourage unauthorized entry into the site and site disturbance. Additionally, a monitoring and maintenance program will be implemented to ensure the success of wetland compensation efforts in accordance with regulatory agency permit conditions. This monitoring and maintenance program will continue until issuance of a Certificate of Compliance by the Adams Conservation Commission.

As part of the monitoring/maintenance program, permanent brightly colored control stakes identifying fixed plot centers for monitoring purposes will be placed within the wetland compensation area immediately following site construction and planting.

Photographic stations also will be established at these same monitoring locations to document the development of the wetland replacement area. Photographs will be taken coincident with each monitoring event. Photographs will be taken before, during and after site preparation and planting, as well. Each photograph will note the date, time, weather, and other relevant observations.

Throughout the monitoring period, the wetland replacement area will be monitored in detail monthly during the growing season, or as specified otherwise in the Order of Conditions to be issued by the Adams Conservation Commission. General observations will be made relative to the integrity of erosion/sedimentation controls, the establishment of vegetation, side-slope stabilization, and factors/events adversely affecting the viability of the wetland compensation area. These factors/events may include herbivory or invasion by such species as *Phragmites australis* or *Lythrum salicaria*. Under these circumstances and if corrective action is warranted, the most appropriate course of action will be coordinated between the MA Department of Environmental Management and the Adams Conservation Commission.

In addition to the above-referenced general observations, baseline data for evaluation of the wetland replacement area will be collected at each monitoring station on a monthly basis during the growing season. These data will consist of plant species composition and percent cover. For monitoring locations associated with herbaceous vegetation, data collection will be based upon the establishment of five (5) foot radius plots, with the fixed staked locations cited above to serve as the plot centers. For monitoring locations associated with shrub/scrub vegetation, data collection will be based upon the establishment of fifteen (15) foot radius plots, with the fixed staked locations to serve as the plot centers.

Lastly, for the duration of the monitoring period, monitoring reports will be prepared annually and provided to the Adams Conservation Commission. The first annual report will be prepared at the end of the first growing season following wetland compensation plan implementation. These annual reports will document all data collected and observations made during the preceding year (including photographs), all activities undertaken relative to the wetland compensation area, and summarize any agency consultations. The annual reports also will provide an evaluation of the wetland replacement area with respect to stated goals and objectives in order to establish permit compliance. Recommended courses of action, including any corrective measures, will be documented, as well.

SUMMARY

As described above, a wetland creation plan will be implemented to compensate for impacts to wetlands associated with construction of the multi-use trail system, golf cart paths and golf holes. For the most part, wetland impacts are limited to the selective cutting/pruning of vegetation, with no loss of vegetated wetland resources

resulting from these actions. Vegetated wetland losses only will be associated with two locations (Crossings 5a and 5c) where trail widening will result in impacts to approximately 575 SF of viable vegetated wetland. While an additional 1,595 SF of wetland also will be impacts at Crossing 5a, these wetlands were determined not to play a role relative to the interests of the MA WPA and, therefore, were not incorporated into the wetland impact calculations.

As indicated in Table II, implementation of the proposed wetland compensation plan will result in the establishment of approximately 15,650 SF of scrub/shrub and emergent wetlands. An additional area of open water totaling approximately 2,750 SF also will be created, with each of the three proposed open water pool areas to be approximately 900+ SF.

TABLE II
WETLAND COMPENSATION SITE AREAS

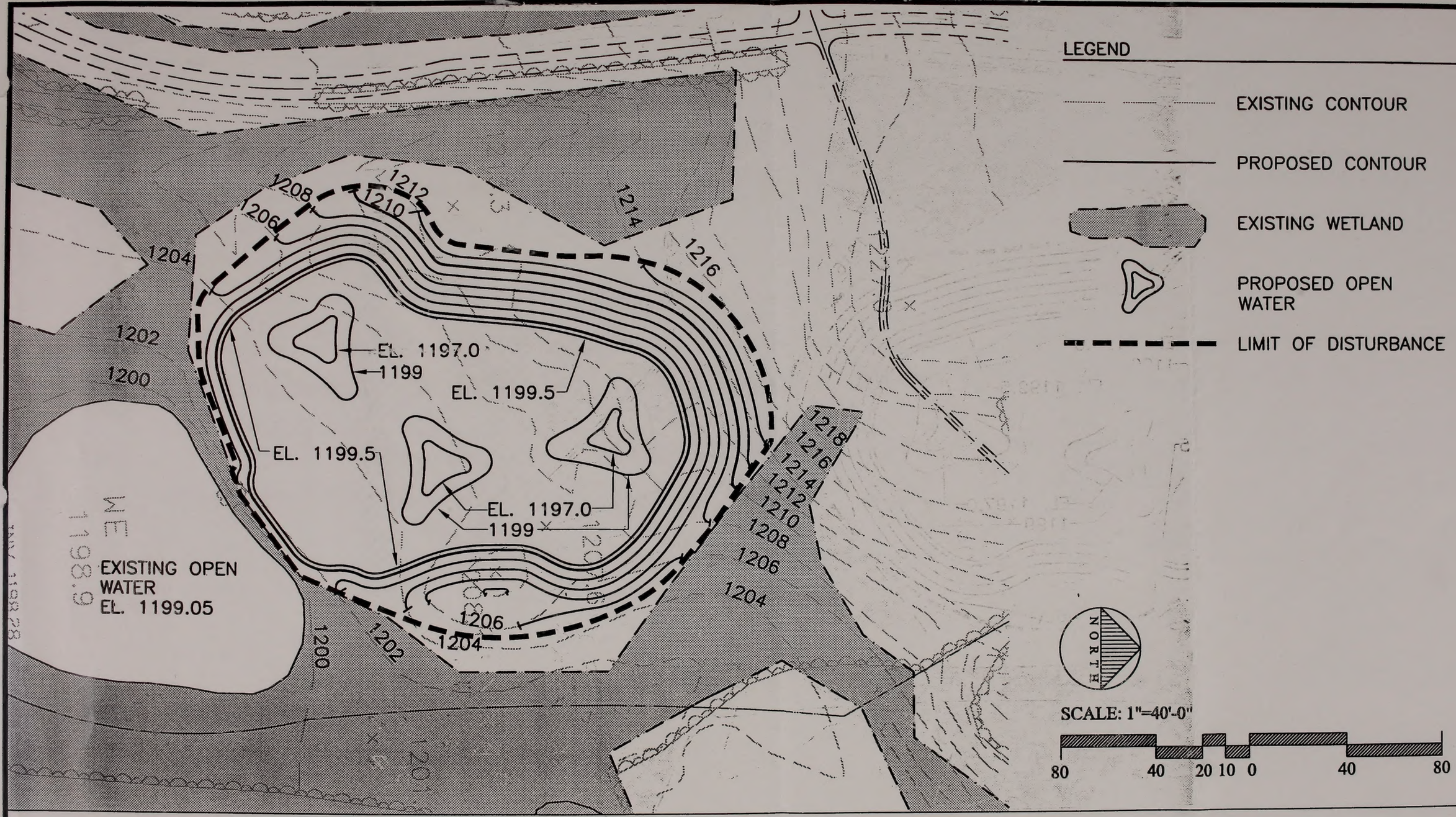
Compensation Site Feature	Area (Square Feet)
Vegetated Wetland	15,650
Open Water	2,750
Wetland Side Slopes	12,850
Total Area of Disturbance	**31,250**

Overall, wetland creation activities will yield a replacement ratio for vegetated wetland impacts of approximately 2.5:1, a ratio that includes the above-referenced 1,595 SF excluded from the calculation of wetland impacts. Excluding this latter area from the calculation would yield a compensation ration of 3.35:1, and result in net increases of approximately 15,075 sf (15,650 sf minus 575 sf) of vegetated wetlands and 17,825 sf (18,400 sf minus 575 sf) of wetland resources (i.e. vegetated wetlands and open water).

Attachment A

Wetland Compensation Area – Conceptual Grading and Planting Plans





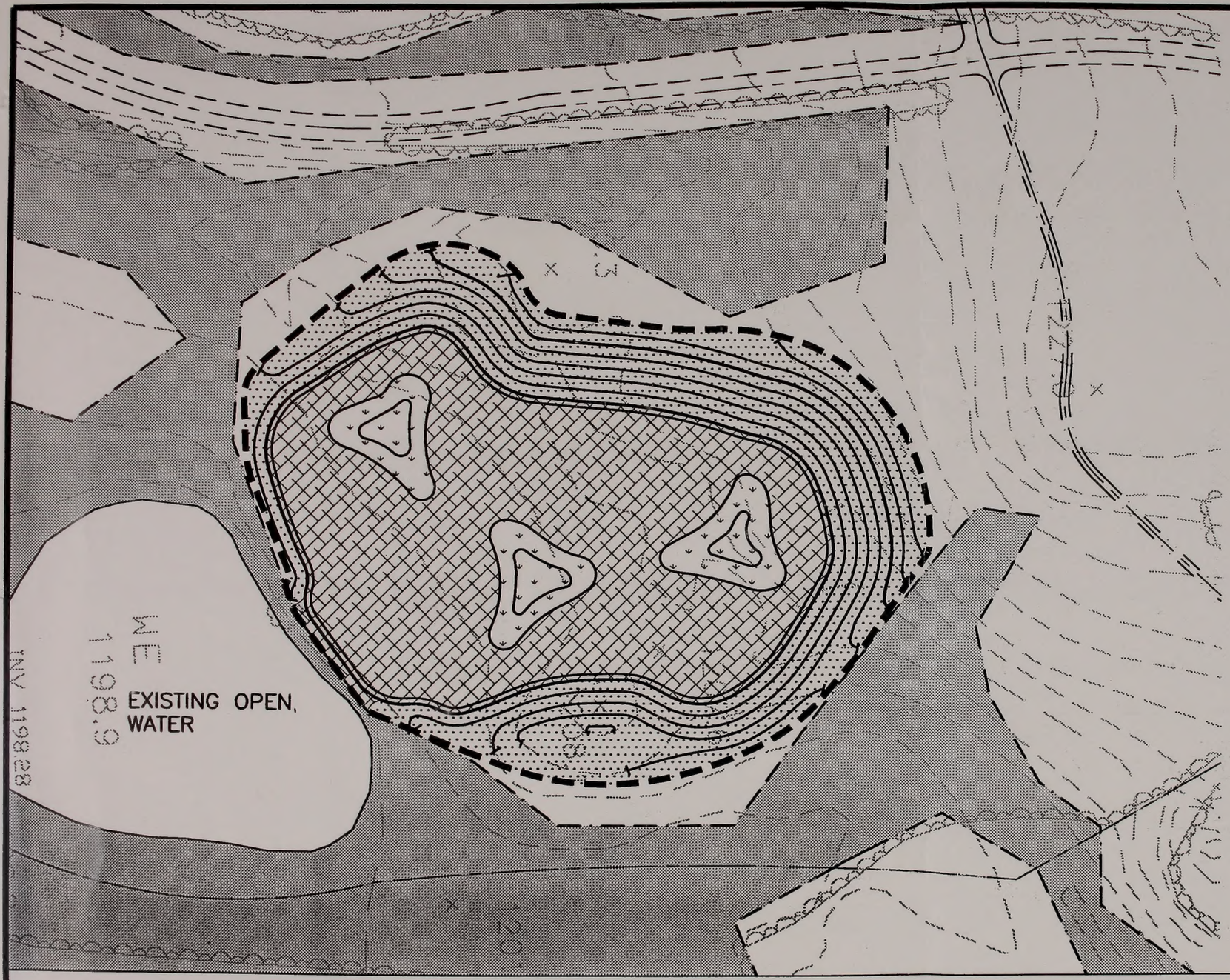
GREYLOCK CENTER PROJECT - Wetland Compensation Area / Conceptual Grading Plan

SCALE: 1" = 40'-0"

DATE: January 19, 2000

Massachusetts Department of Environmental Management
Greylock Management Associates
Copley-Wolff Joint Venture





LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING WETLAND
- PROPOSED OPEN WATER
- LIMIT OF DISTURBANCE
- PROPOSED OPEN WATER / AQUATIC EMERGENTS
- SHRUBS / WETLAND SEED MIX
- UPLAND SEED MIX

NORTH

SCALE: 1"=40'-0"

80 40 20 10 0 40 80

GREYLOCK CENTER PROJECT - Wetland Compensation Area / Conceptual Planting Plan

SCALE: 1" = 40'-0"

DATE: January 19, 2000

Massachusetts Department of Environmental Management
Greylock Management Associates
Copley-Wolff Joint Venture

